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THE ANNALS OF
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ACCUMULATION OF CAPITAL IN THE JAPANESE ECONOMY

By Ichiro Nakayama

Professor of Economics

I. *Need of Capital Accumulation*

As independence is close at hand, the problem of capital accumulation has again come up as the major issue of the Japanese economy. As reasons, first, there is the need of rationalization of enterprises. The Japanese industries are badly needing overall rationalization in their postwar programs of rehabilitaion after a literally big blank period that was war. Equipment must be replaced. Installations must be modernized. Techniques must undergo thorough renovation. All that is needed to realize these musts is, in a word, capital. This had been advanced as a legitimate course long before independence became an issue of the time. Now on the eve of independence, the issue is being taken up again in its bearing to competitive power on the foreign markets. Aside from the plain fact that competitive power on foreign markets, or reserve capacity to export, is generally governed by comparative costs of production, improvements in production technique are found to have a predominant importance when the composition of export commodities and its future trend are studied. Let us take textiles. They continued to represent 50 per cent of the total value of exports in the statistics of 1950. But, when broken down by description, the statistics showed a greater increase for more highly processed goods, on an average as much as 83 per cent for cloth against 17 per cent for yarn. Again in cloth, while raw cloth saw scarcely any change since the year before, finished cloth priced higher doubled in value in one year. So much for textiles. In the case of metals and machinery, which have recently grown in importance abreast with textiles, the raising of quality of products by refurnishing equipment is a pressing necessity. So far as we must cultivate greater capacity to export in order to be able to achieve an independent economy, rationalization of industries through the reenforcement and renovation of equipment is the paramount need of the time. It is quite in order that the need for capital accumulation was taken up in this connection on the eve of Japan regaining independence.

The second reason is the prevention of inflation. This, too, is a proposition not at all new. Already as early as 1947 and 1948 under intensifying inflation, savings were strongly advocated as means for stopping it. Indeed, savings at that time largely meant restraints on consumptive spendings from money incomes, and as such were in some respects different from the substantial formation of capital. It was certainly problematical at that time if savings could directly result in capital accumulation and if objective conditions in favor of it existed. Going one step further, it could be argued that even inflation might contribute to the accumulation of capital through curtailed consumption compelled by high prices. However, the inflation that visited the Japanese economy at that time did not answer either question in the affirmative. Suppose the inflation had actually prompted capital accumulation, it would directly have caused social unrest, by aggravating inequality in real incomes, of which one is reminded by the behavior of labor in those days. Apart from that point, the material basis of production which might influence such forced savings to gravitate into formation of real capital was totally non-existent. This is the reason savings were chosen as a means of checking inflation. This argument for a time receded from the forefront as the Dodge Plan attained success. But, as repeatedly pointed out even today in order to secure conditions for independence, the Japanese economy has not entirely grown safe from the danger of inflation. Naturally enough the "special procurement" boom created by U. S. orders for one year after the outbreak of the Korean Incident brought the same problem to the surface for current discussion. Despite the possible impression as being untimely in these days of a business setback, it remains an issue deserving attention, if independence is to be a serious business.

This is how capital accumulation has come into discussion today. Together with the introduction of foreign capital, it would seem to exhaust the whole list of major issues of present-day concern. In fact, the argument that capital accumulation is an important matter for the Japanese economy is not new. For, Japan, handicapped on the one hand by the "backwardness" of her economy and urged on, on the other hand, by the prime necessity to maintain a given standard of living under the pressure of increasing population, capital accumulation has always posed a problem of supreme importance. It did not come before the footlights necessarily under the cloak of capital. Sometimes it made appearance as a tax problem. The role the land tax played since the 1890's when the modernization of the country took place, the purposes, to which government funds made up largely of farm taxes were put, and the extensive systems of subsidies and grants-in-aid,—these and other financial dispositions were never handled without regard directly or indirectly to accumulation of capital. Only when the limit to taxation on capital came into question, this relationship made itself visible, though then one was seeing only the head of an iceberg. Wages, when looked at from the other side, are another of such cases. The relative ratio of income by labor in national income statistics indicates indirectly the ratio of capital accumulation. The ratio of labor income in Japan, when labor is taken in a narrow sense, is lower than in Europe and America. This phenomenon is commonly known as cheap labor, but may be taken as demonstrating the immense need for capital acumulation. This relationship was clearly seen in the recent wage demands, especially in labor's demands of profit-sharing types, and their effects on reserve power to save were fully studied, so that expatiation on this point would be superfluous. A further instance is foreign trade. Foreign trade, too, itself a cornerstone on which the Japanese economy can only subsist, stands in very close relationship to accumulation of capital. The change of industrial structure effected by foreign trade can be reduced to the problem of capital, viewed from domestic conditions responding to the change. Needless to say, the accumulation of capltal given emphatic importance in its relation to independence is substantially under its influence. Moreover, in view of the increment it earns for national income, every item of foreign trade, from net balance rates to terms of trade, affecting as it does domestic production and consumption structure, represents a certain phase of capital formation. The problem of capital is present everywhere and always in the Japanese economy and specific problems cropping up from time to time are nothing but the same thing under different cloaks that the needs of the time place on it. Though taking differing forms, the problem remains one and the same in essence. The simple reason why accumulation of capital is being much talked about as conditions for independence are considered, is just that economic independence being such a fundamental problem, this omnipresent one, no less fundamental, is standing out in relief.

This is a matter of common sense. Not only with the Japanese economy but universally, it is perfectly admitted that economic phenomena in modern times cannot be rightly grasped without consideration of capital. No wonder this commonplace matter should come into attention in times of emergency. An economic emergency, such as inflation, crisis, collapse or reconstruction, puts one's mind to inquiring seriously what is economy after all, and, in reference to the present subject, to reverting to the old question of capital. This is commonplace enough. But when we view it as a problem of the Japanese economy, we find in this commoplace reconsideration some questions peculiarly Japanese. Why was it that accumulation of capital should be given such stress particularly in regard to the Japanese economy ? In what manner is it related to the discrepancy between the standard of production and the standard of living ? Accumulation of capital, it is clear enough, is a prerequisite of the first order for elevating the standard of production. But it is asked in what manner it stands in relation to the standard of living. As widely known, one of the fundamental peculiarities of the Japanese economy is a glaring gap between productive power and the standard of living. In what relation does capital stand to the gap ? If granted that capital is the core and kernel of the modern economy, movements of capital must be able to give clue toward explaining the contradiction. Or, this explanation from the angle of capital may prove a most satisfactory explanation. Reversely, the full meaning of the present-day need of capital accumulation can only be grasped when we see it in the light of the fundamental feature of the Japanese economy.

II. *Dual Aspect of Accumulation*

An important fact that needs mentioning in the first place, is that the rate of capital accumulation in Japan is pretty high. In speaking of the rate of accumulation here, we must distinguish between savings considered in terms of money and accumulation envisaged as actual entity, and a perusal of statistics with this distinction in mind gives us figures not agreeing to each other. However, this remarkably high rate of accumulation in either case compared to other countries first draws our attention when we are thinking about capital. For, it is where the high rate of accumulation, and therefore the sharply rising rate of production closely related to it, stand in contrast to the still low standard of living, that the peculiar character of the Japanese economy is found. We shall analyze it with constant reference to capital.

The goal of the savings campaign for 1951 was set by the Savings Promotion Department of Bank of Japan at 530-billion yen, representing about 12 per cent of the estimated 1951 national income of ¥4,656-billion. This is the aggregate of savings estimatedly to be drawn in chiefly through savings institutions and does not completely cover the total savings in terms of money. A more inclusive calculation put actual savings during the prewar period between 1913 through 1939 at around 15 per cent each year. This comes close to the actual amount of non-governmental savings in the postwar days calculated from national income statistics. According to estimate made by Prof. Yuzo Yamada (in Keizai Hyoron, February 1952), the rates of accumulation of non-governmental capital each year from 1946 to 1950 inclusive are respectively 15.5%, 11.7%, 13.6%, 13.1% and 14.6%, indicating that the prewar rates were well maintained in spite of the economic turmoils following the War. Though this result was not attained by voluntary savings alone, to think of services offered by the Reconstruction Bank, these persistent high rates were spectacular, nontheless. This was further endorsed when the Annual Economic Report (White Book) of the Economic Stabilization Board issued July 1951, stated, "Installation investment in privae industries for the 1950 fiscal year amounted to ¥165-billion. This meant an increase of 30 per cent, or 18 per cent if the rise of prices is considered, compared to the preceding year and, in terms of commodity, the average level for the prewar period of 1934 through 1936 was attained almost by 80 per cent."

As said before, savings in terms of money do not by themselves represent accumulation of real capital. To judge the real productive power of a national economy, one must look at savings reversely from the side of investment, which in this case includes investment by governmental and public bodies as well as by private business. Concretely, it means to enumerate a whole list of items of investment, for housing, industrial equipment, stock on hand, etc., a task by far more baffling to statisticians than the case of savings. If national income statistics which are rapidly improving should come nearer to perfection, the estimate from the money side will be found roughly to agree with that from the commodity side, and then a more accurate figuring of the rate of accumulation will be made possible. Until then we have to work with partially surmised estimates with a full knowledge of defects. But the proportion of surmise in this case is deplorably great. For instance, Colin Clark says in his "The Conditions of Economic Progress": "It is admittedly the case that the proportion of the Japanese national income saved is exceptionally high, exceeding 25 per cent even in peace-time. We can only reconcile this with the high proportion of products going to labor if we allow that the Jananese capitalists spend very little on personal consumption, that the rural population and urban working proprietors are exceptionally thrifty, and, indeed, that wage-earners themselves save a substantial proportion of their incomes." (2nd ed., 1951, p. 526.) He calculated rates of accumulation, first by finding annual increases of capital through the successive comparison of the amount of capital for each year obtained from national wealth statistics, and then by comparing these increases with national incomes for the respective years. This is evidently the commodity method. The observation may not be accurate, as the method itself is not above question, and particularly the figures he used as sources may have contained some errors. But it is shown that the rates are prominently high in comparison with those of other countries obtained by the similar method. In 1950, according to the table he gives in another passage, other countries, with 20 per cent at the highest, even America not coming up to that much, mostly stayed below that percentage. To be more specific, even in one and the same country, Japan, different ages gave different rates of savings, as 42.1 per cent on an average in the 1919-1924 period, 26.6 per cent in 1938 and 28.5 per cent in 1939. It may be added that the trend of these rates going down with the progress of years is significant as an index accounting for the growth of capitalism. Anyway, these figures are good enough for pointing out that the Japanese economy has marked a very high level in the rate of accumulation of real capital, which will serve as a starting premise.

What has caused this singular fact will soon be the major issue in our further analysis. Various causes may be mentioned, such as the hard-working trait and habit of the people or preparedness for natural calamities, which Colin Clark points out partly ; but satisfactory explanation will not be obtained without regard to another important factor further resulting from such causes. That is the discrepancy between the standard of production and the standard of living. We shall not reiterate this basic contradiction peculiar to the Japanese economy, as we have had occasions to discuss it. (Cf. The writer's article, "Some Characteristics of the Japanese Economy" in "Economia Internazionale," vol. V, No. 1, Feb. 1952.) Let us state them briefly with reference to capital accumulation. First, the high rate of accumulation indicates high productive power. A most recent analysis of national income has set forth this in a more tangible shape, which was long referred to as the sidelight of the rapid growth of the Japanese economy. Again quoting Colin Clark, the annual rates of growth since 1903 were singularly high, 5.4 per cent at the minimum and 7.7 per cent at the maximum. The authenticity of the sources utilized for these figures is not complete, as in the above-cited case of savings, and research work to correct them is being conducted by some younger Japanese experts on national income. But, if, for instance, 3.7 per cent, a figure obtained by Prof. Kazushi Okawa, is taken, the situation will not change radically, for Japan is by far exceeding the 2.5 per cent of the United States, only Portugal and the Soviet Union running up closely in recent years. In view of the normal relationship of productive power and capital, this consequence is rather natural. The same can also be demonstrated from the fact that the rate of savings is the product of economic growth by capital coefficient. In this way, the high rate of savings is directly linked to the high rate of growth. Secondly, this high rate of savings is linked to the low standard of living. In most cases today, Japan's low standard of living is talked about in comparison with prewar data. According to the White Book of the Economic Stabilization Board, the nation's standard of living for 1950 was 82 per cent of the prewar standard on an average in cities and farming districts. But apart from this short-range view, a thorough reflection on facts of the Japanese economy for the past 80 years discloses that the national standard of living was low in a world-wide comparison and, despite the rapid rate of growth, has never adequately advanced. The high rate of population increase may partly be responsible. The fact that about half of the nation are farmers, each cultivating land smaller than 2 acres may be another reason. The general backwardness of the Japanese economy, too, is an important factor, to be discussed later. But we shall not at present inquire into each of these causes. The question which cannot be passed by in the present discussion is the way how the low standard of living has effected the high rates of savings and of accumulation.

In taking another step into the inquiry, we shall be more specific in our analysis. The first thing to be noted is that there is a difference in the rate of growth by industries. The high rate of growth of the Japanese economy was due to the rate for the manufacturing industry and not for agriculture. The degree of contribution by agriculture to the national income has been gradually on the decline during Meiji Era (1868-1912) until in 1950 it was barely 20 per cent. The remarkable growth was thus the advance in productive power of the manufacturing industry. Seen from the angle of capital accumulation, this means that almost the whole saving capacity of the Japanese economy has been concentrated in industry, especially large-scale modern industry. Such being the case, agriculture was destined to become a losing rival and, pressing heavily upon the standard of life in general as it occupies half the population, has been working adversely against the elevation of the living standard in Japan. Secondly, the relationship between the rate of income and the rate of investment must be discussed. The rate of income, needless to say, is affected by the size of population. With a rapidly increasing population, the volume of investment, or the rate of savings, that will bring about increases in the per-capita income, will grow far larger than seen at the first glance. It can be said that a less advanced nation, where industrialization and population increase are basic requirements, will find her efforts to raise the standard of living set within a formidable frame, despite the enormous rate of economic growth achieved. Third to consider are the terms of foreign trade. In a long-term observation, production goes up when the terms of trade deteriorate on a world-wide scale and vice versa. If this experience-tested generalization intactly applies to Japan, it may be said that the advance of Japan's trade was achieved because of the worsening of the terms of trade. As a matter of course, the center of trade is the manufacturing industry. That being granted, it is questionable if the high rate of accumulation, which has made possible industrial development, did not directly work as a cause holding down the living standard. Suppose the terms of trade themselves have no direct relationship to the living standard, there still remain a large number of questions, requiring further examination, that lie between the general changes of trade and the foundation of the Japanese economy. Examination of these questions, in each case, requires thoroughgoing evaluation of facts, as stated before, and will be above mere hasty guesswork. Indeed, the facts given here are presented because they conclusively suggest the method to solve economic problems under the conditions peculiar to Japan. Our problem of capital accumulation must be approached with this particular method in mind.

III. *Development of the Theory of Capital*

It is widely understood and needs no expatiation in this place why accumulation of capital is the fundamental requirement for economic development. Its theoretical basis is the advantage of roundabout production. Accumulation of capital makes possible the roundabout employment of factors of production, especially labor. Fruits expected of the direct application of labor, despite possible help from technical advancement, at its best, do not promise anything more than a hand-to-month subsistence. The roundabout use of labor, or, in other words, the raising of productivity of labor by the help of capital, is alone the means in modern form of increasing profits. Even technical advancement needs accumulation of capital as a prerequisite. This was clearly established by the theory of capital of Böhm-Bawerk in the 1870's and leaves little to be added. This theory established by the Austrian school is more than an academic theory but rather an everyday affair we are personally familiar with.

Let us take the Asian economy as a whole and compare it with that of Western Europe. The most outstanding fact that leaps into our eyes is that the vast expanse of Asia, while holding half of the total population of the world, is only earning one fifth in terms of income. This plight is commonly described, in a terse phrase, as the backwardness of Asia. But whence came the backwardness? It is not that the peoples of Asia are not industrious. They are never less, but sometimes rather more, hardworking and willing to work than the peoples of Western Europe. The lower the living standard, the harder people have to work in order to keep the pot boiling from day to day. Working hard, why do they have to see the standard of living rising niggardly ? The only explanation is, economically viewed, the shortage of capital. Referring to Colin Clark's estimate for a third time, in the use of capital per employed person, Japan stands on the one-third level and the whole of Asia on the one-fifth to one-tenth level of Britain and the United States. It needs no repetition that the smaller the accumulation is the lower the productivity will be, and these two again imply a lower standard of living. This is demonstrated by the facts that the rehabilitation programs of Asia are in reality always mapped out on the basis of capital required for development and that U. S. aid to Asia virtually takes the form of aid in capital.

This is a basic fact. It was rightly given renewed attention when we were faced with reconstruction after the War. Nor has it been affected in the least by the antagonism between socialism and capitalism. But we are aware that the way capital benefits an economy is different according to the stage of economic development. Though the fact of the beneficial effects on production remains unchanged, the manner of the contribution greatly varies according to the ages and the degrees of economic maturity of a country. The same function of capital in a system of full employment cannot be witnessed in under-employment. Differences in production structure are a poweful factor of changing the effects. Similar differences are observed between the working of new investment where accumulation has been accomplished to a certain extent and the working of such investment in a less mature economy. In short, there exist remarkable differences according to the stage of economic development. Our interest will be focused on this point in the following discussion.

The foregoing observation that capital functions differently with actual economic conditions can best be explained by reviewing what basis the theories of capital in different ages in the history of economic theories adopted in setting up their systems. Though, as stated above, the primary proposition on which theories of capital were based was the advantage of roundabout production, they did not originate in such a pure form. The reasoning took a contrary order and started from the close observation of the workings of capital at different ages. The working of capital peculiar to the economic development of different ages were analysed and taken to represent the intrinsic nature of capital historically viewed, and then this and other relevant notions were worked out into an elaborate and general system. To cite an example, in the early period of the classical school, capital was treated in combination with savings. A latest example is that capital is being contemplated inseparably with capitalism at its deadlock. The more general "roundabout" theory was constructed to support and cover inclusively all these specific particular capital theories. This is why the modern theory of capital of the Austrian school became a system chronologically far later than those of the classical and socialist schools. Though no one today thinks about capital but by this fundamental theory, no one can disregard the working of capital peculiarized for each different stage of historical development. More particularly, in discussing capital accumulation in Japan, it is imperative to take into full account the half modern and half non-modern character inherent in the Japanese economy. Because of its complex character, in which problems encountered over different periods by the countries of Western Europe present themselves all at once, the preliminary task is to find without error what we should rightly pay attention to.

We do not mean to elaborate here on doctrinal history. Let us only give some features having reference to our problem. First comes the classical school, which found the most essential character of capital in the thrift of man. According to Adam Smith's Wealth of Nations, the essential requirements to promote national wealth were division of labor and capital. The former was the means most effective of increasing the efficiency of labor ; the latter the primary factor making division of labor possible. This idea is, if put in present-day terms, equivalent to regard capital as a condition for economic development. Smith, however, did not think that accumulation of capital was accomplished simply by the augmentation of production profits or the increase of natioal income, but "parsimony" did it. "Parsimony, and not industry," he wrote, "is the immediate cause of the increase of capital. Industry, indeed, provides the subject which parsimony accumulates. But whatever industry might acquire, if parsimony did not save and store up, the capital would never be the greater." (Wealth of Nations, ed. Edwin Cannan, p. 321.) Capital comes out of the fruits of production. But what Smith meant was to show the true meaning of the accumulation of capital by putting a factor, thrift, in between the mere increase of the fruits of production and the formation of capital. This was clearly an important discovery of the truth about the nature of capital. Though it historically grew out of the need of capital at a time when capitalism was a rising tide, his idea must be credited theoretically too as a contribution of immense value in clearly showing a line pattern connecting thrift, accumulation and production increase. This idea of capital by Smith remained dominant long in the thought of the classical economists. Both Senior's explanation of interest by abstinence and Marshall's theory of waiting belong to this category of thinking. One of the merits this theory carries is, as will be explained, the directness of appeal to individuals in their personal experiences of economic life.

It was not long, however, before this idea of the classical economists was subjected to attacks. They came from the socialist-school economists whose way of thinking was so widely diversified in essentials and details that, apart from the common background against classicism, unity among them in the treatment of problems was hardly observable. Moreover, we must point out striking differences by period in the way they, with Marx as a leading figure, adopted in treating of capital. In treating of the nature of capital which is our present problem, they, it can generally be said, put primary importance on what accumulation actually does. With the classical economists, the more capital accumulated, the better economic interests were served, and therefore the personal motive of thrift was given a foremost place unreservedly. For Marx, on the other hand, the focal point of interest was in what relation accumulation stood to economic self-reproduction. Controversies over the possibility of expanded reproduction and discussions on relevant issues like imperialism and colonialism all clearly showed where their chief interest was. Through such discussions and analyses, Marxists sought to visualize the downfall of capitalism. They think that the whole set of problems cf capital, from its definition down to primitive accumulation and crisis, must be grasped in connection with the theory of collapse, though the validity of such interpretation leaves much to be examined. For instance, Schumpeter remarked that these notions had all long been dead and even gone below ground. Without going so far, it is well known that, to take further examples, their theory of crisis incorporating the problem of credit and their theory of development and adaptation remain only poorly developed. This, however, is not to discount the importance of the problems Marx sought to take up. Though the Marxian solution kept to only one phase of the matter and needed to undergo further development in many respects, we are prepared to recognize their contribution in demonstrating that the very process of accumulation poses a problem gravely affecting the conditions of equilibral development. To say that to Marx accumulation was the essence of capital, may be going too far. But he brought to light a new phase of the working of capital not noted by the classical econmists, in discovering that at a certain stage of development of the capitalist economy it was the dynamic action of accumulation that was the problem of capital.

In the third place there is the Keynesian standpoint. Keynes' theory of capital has in common with Marx's that they both are anti-classical. This heresy in regard to the classical school characterizes his General Theory. But what Keynes expounded in this work was that investment which fills the gap between income and consumption in a short-run observation is not always sure to do so in a country where capital accumulation is pretty large, and just that. To extend the reasoning to apply to a long term and develop it into the theory of secular stagnation was left to be accomplished by later Keynesian economists from Hansen to Domar. Their doctrines seeking to explain the causes of long-term stagnation of capitalism at its maturity, are rightly more concerned with the analysis of such subsidiary factors as population, technique and frontiers. Though the focal point in this analysis, for our present problem, is the size of investment opportunities, full credit must go to the Keynesians for bringing capital to the foreground in a new shape as a problem covering the entire economy. The new shape here means, first, that the premise of under-employment as opposing full employment is deliberately introduced in the theory. This is greatly related to the ethics and logic of savings, as pointed out by Keynes. The classical economists, working always on the premise of full employment, thought that savings were instantaneously diverted to effective investment. So far as investment was intended for the diversion to a more profitable use of the factor of production, there was no contradiction between the logic and the ethics of savings. For savings then were a force promoting economic interest of the society as well as a personal virtue. But once that premise was given up and the state of under-emqloyment due to involuntary unemployment was taken into consideration, the matter did not always go so simple. Under these conditions, savings did not necessarily result in effective investment, hence the consequence, that savings, though a personal virtue, were not always a social good. We already pointed out that the personal element has an important bearing in the theory of capital. In that sense, the mere shifting of the premise from full employment to under-employment meant a difference greater than seen at first sight. The second meaning of the new shape is the importance placed on consumption. With the classical school, production occupied a dominant position, as seen in its production-thrift-savings formula. Malthus, giving more weight to consumption at the heyday of the classical school, was a minority voice. It was Keynes who, coming back to Marx, gave more importance to the role of consumption. This is most clearly shown in the theorv of effective demand, so well known that we see no need of dwelling upon it here, but to note that, in view of the foregoing two points, the gist of the Keynesian theory of long-term stagnation is that effective demand which is the economic motive force does not necessarily ensure the equilibrium of full employment. This theory has been the target of many oppositions. Some of these are made from the standpoint of the classical school, others from the Marxian position. Some critics reject it from a difference in evaluation of the incidental factors which form the premise to the theory, while still others, going into its logical structure, declare it untenable altogether. Simplifying the matter by taking a present-time view, it may be fair and helpful to draw a clear line to demarcate economies with conditions amenable to the Keynesian view from other kind of economies. With all criticisms and limitions, however, no one can deny that this school established a new way of looking at the working of capital, thereby serving as a stimulus for coordinating varied notions on capital. Its theory clarified in a most convincing manner that capital acts differently according to the stage of maturity of capitalism. Besides being convinving, it was practical. One of the reasons Keynes' theory could grow to academic prominence so as to claim the name of a school was its practicality. This characteristic is perhaps due, firstly, to the fact that the concepts utilized by him were of general kind and amenable to statistical treatment; and, secondly, that, starting from a precise and penetrating evaluation of the facts of Britain's economy, he always was aware he was working for the specific political program of coping with chronic depressions. The practical character is one of the features of the Keynesian way of thinking, which makes the ready application of the theory possible to the present discussion of capital accumulation. The Keynesian policy of public investment is an outcome of such application. In case income is not entirely applied to consumption, as seen from the empirical fact that the value of propensity to consume is less than the unit, deficient consumption must be filled up with fresh investment. Now, investment, in an economy with capital accumulation already large enough, is always demanding to grow at an ever expanding rate and is rarely finding itself sufficientif left free. If chronic depression is due, as his adherents say, to the failure to firmly secure fresh investment large enough to maintain full employment, some artificial policies must be devised as a means to correct this situation. Keynes mentioned with special weight the lowering of interest rates as one of such remedies. But there is a certain limit to interest policies under the capitalistic financial system. To meet the demand beyond the limit, public investment must appear upon the scene, to replace private investmet. That America's economic policies since the New Deal have chiefly been framed with major emphasis on public investments, though through up-and-down vicissitudes, is widely known and today is becoming a pattern for other countries. There are many questions yet untouched regarding the effects of, and especially the limits to, public investment. Nevertheless, no one can be indifferent to the theoretical and practical import of the conclusion that public investment is a cardinal form of capital accumulation side by side with private investment.

IV. *Position of the Japanese Economy*

As stated above, capital accumulation in the Japanese economy must be looked at from the angle of its characteristic feature which consists in the discrepancy between the standard of production and the standard of living. We have studied some ground principles underlying this situation. Some of such principles refer to economic relationships of general and fundamental significance, as, for instance, between population increase and foreign trade, while some others refer to decidedly political relationships tinged with, say, militaristic color. With these in mind, one may look retrospectively and say that this contradiction was imposed, without choice on the part of this country. Japan had to strive for productive power higher than its ability allowed, in order to secure a rising standard of living despite the ever increaing population. Though with occasional ups and downs, it has been the course that fate set on her since she opened her doors to the outside world at the middle of the nineteenth century. The level of capital accumulation, pretty high in world comparison, is an inevitable consequence of this fated course. The expression of "fated," we admit, is inaccurate and inadequate to depict the whole matter. We do not mean it in a predestinarian sense. We mean the road a modern industrial nation facing the two conflicting factors of population pressure and poor natural resources had to follow by sheer necessity. Though the similar course which England followed early in the nineteen century may serve to demonstrate the validity of the description, the comparison must be broadly qualified. For there are differences, to name, in the ways agriculture was disposed of as the primary industry and conditions of oversea markets, and there is the time distance for a top-runner nation and a late starting one. The differences grow even wider when one closely looks into how domestic political forces and industrial and financial capitalists inseparably connected thereto of this countly strived to take their chances in the nation's career. Despite all these circumstances, one is compelled to admit, capital accumulation in Japan was carried out not voluntarily nor out of the time-honored virtue of industry and thrift but rather as something inevitable in following the pre-arranged course or something imperatively forced from outside. Its rapid progress and the characterstic contradiction between the standard of production and the standard of living are not two, but one and the same thing. And here lies the problem, specifically Japanese, of capital accumulation.

So far as there are no significant changes in basic factors, such as population, natural resources and technique, the destined course based on these factors will remain the same. The contradiction between the standard of producticon and the standard of living will not be dissolved, in the last resort, but by raising the standard of production. This does not at all mean that the present low living standard may remain as it is nor may the final bulwark for more brisk export continue to be the notorious cheap labor. The living standard, first of all, must set as an immediate target the return to the prewar level with due consideration for sounder class gradation and increased stamina under business fluctuations. Indeed, no policy is worth considering which does not aim at the stabilization of living as its final objective. This is more specifically true of cheap labor for increasing export. Granting for a moment that a low living standard, being reflected in the costs of exports, affects favorably the international difference of export costs, sole dependance on this means, imposing the whole burden on labor, will no longer meet acceptance in view of the present condition of the world market. We bore all this in mind when we said above that the final force to determine the living standard is the power to produce. This is endorsed by the phenomenon that the international difference of wages is but a reflection of the difference of power of labor to produce in respective countries. In discussing the Japanese economy, burdened as it is with the population increase, one is incessantly reminded of this argument.

From the foregoing observation our first conclusion is that capital accumulation in the Japanese economy even today remains on imperative need. The situation that high-speed accumulation of capital is imperative in view of impending independence and future development remains unchanged. The view of capital advanced by the classical economists still literally applies to facts in Japan. The tenet that thrift is the prime factor of capital formation can rightly be upheld along with the ethics of thrift and holds good logically aside from the ethical consideration. In fact, partly accountable for the high rate of savings was the fact that in this country savings were assured of returns securely supported by as rapid growth of the economy. The people realized that savings were profitable by themselves. The prime motive that caused many a self-made capitain of industry to go through hardships with the clenched teeth was certainly found here. In this respect, it is doubtful if present-day savings promise as brilliant prospects. There are some misgivings that the Japanese economy may not keep on developing as rapidly as it has done in the past. For, according to the international comparison by Colin Clark, in every capitalistic country the rate of capital accumulation declines as its economic structure grows mature. In Japan with a high accumulation record, the rate steadily declined from the singular figure of 50 per cent around 1880-1910 to the moderate 25 per cent in the 1930's, in step with the general trend. If the slackening is taken to signify the gradual slowing down of economic development, profits may no longer be assured at a rate as large as in the past. We said above that the high rate of savings was forced from outside. But, in fact, the handsome returns accruing from savings worked to dim that feeling. Compulsion as an objective term was psychologically replaced by the active pursuit for profits subjectively felt.

If, however the conditions have undergone change, the future accumulation of capital may not be expected as on the old basis. The change has not yet gone so far as to make it necessary to preach the virtue of consumption rather than the virtue of thrift as Keynes did. Even at present, the persistent forces, which, objectively viewed, have urged the Japanese economy toward accumulation at a high rate, are not a bit abated, and may have rather been accentuated by the recent population onrush.

An important phase of the theory of capital by the classical school still holds good to the present reality of the Japanese economy. But as a matter of course, the present-day economy, in general terms, differs from that which concerned the classical economists, and, for this very reason, the applicability has certain limitations. One of the limitations refers to the slackening of economic development, above mentioned. If the normal stimulus to personal savings threatens to weaken down due to these circumstancial changes, public savings should come into play to reinforce private savings. Another limitation concerns what Keynes rightly pointed out, that the balance for investment and savings does not always insure full employment. It may strike one as strange at first sight that the Japanese economy, to which the abstinence theory of capital by the classical economist literally applies on one side, should on the other be amenable to the Keynesian view which is established on facts totally different from those of the classical school. But the Japanese economy is one of the modern economies and, as such, has problems similar to those now confronting economic systems in other senior countries. One of the troubles which afflict a later developed country in contrast to a senior country is that it has to face problems that belong to different stages of maturity before reaching them. For Japan, this trouble is magnified by her heavy dependence on foreign trade. The direct motive that made Keynes work out his theory of under-employment was, as well known, the chronic existence of unemployed masses. So far as the unemployment problem is concerned, Japan has to share the difficulties of European countries. These two limitations to "voluntary savings" call into action public savings either to supplement or to replace them. This is what is termed public investment. Public savings, commonly called state capital, can be traced back to taxes and public bonds. Then, what shall be the right proportion of state capital to capital from private savings, in what relationships they shall stand to each other, and what shall be the most desirable form of investment for this kind of capital,—these are questions worth discussing at full length. A glance at how much of the savings and investment in this category is needed at present will show its importance in regard to capltal accumlation. For instance, a February, 1951, report of the Industrial Rationalization Deliberative Council estimated the capital needed for equipment during the fiscal year 1951 at about

¥180-billion, of which about ¥40-billion should be supplied by the state. This was for purely private business, apart from ordinary state funds appropriated for public works, government railways and other governmental enterprises. The situation which required the state to participate by more than 20 per cent, though this included the U. S. aid counterpart fund, etc., for the rationalization program of purely private industries, reveals that a change has actually set in with capital accumulation in Japan. Public investment in the case of Keynes was chiefly considered as a policy for combating depressions. But today it has a far greater application, and the Japanese economy is no exception in this respect.

The difference in form between voluntary savings through thrift and roundabout savings by public power means little in itself. For, the Japanese economy cannot but supplement the shortage in one form of savings with another, as long as capital accumulation is imperative, while income, the source of savings, is limited. One may introduce ideological questions here, but that would not change the logic of economy as appears at the first glance. Of course, savings are no purpose in themselves. They must bring investment in their wake, and it is for this purpose that savings are encouraged. The reason we have been upholding the logic of capital accumulation is that we recognized the rational interactions between savings and investment, provided the latter are prudently made. If investments are directed by, say, militaristic policies, the natural consequence will be that the living standard deteriorates in relation to the standard of production; if investment should be focussed on the manufacturing industry working for foreign trade, agriculture and petty industries will be sacrificed, making the aforesaid contradiction worse. These problems should receive more careful consideration than the mere distinction of two kinds of savings, in view of their importance in deciding the character of the Japanese economy, though it may be noted that this very classification has substantial significance in the instances last mentioned. The reexamination of subsidies, aids or other types of "investment" by the government in this connection is necessary today when savings and investment in public form are given special regard. Without going into details, it may be said that it is necessary to scrutinize more carefully the effects of investment on the present Japanese economy where savings, though high in ratio, are still regarded as far short of requirements. It is common knowledge that many public works projects in government budgets are unproductive. This discouraging criticism must put us to thinking seriously. That governmental undertakings generally lack efficiency can not but be admitted from frequent examples in this country. Even the way of using government fund is often subject to public censure in spite of the assiduous supervision of the Board of Audit. Not all public works expenditure is unproductive. Disaster rehabilitation which takes away the larger part will promote the cause of independence and stabilize the Japanese economy if it is really used to help recovery from damages and the prevention of calamities. In 1952, public works were assigned an appropriation of ¥145.6-billion, of which ¥50-billion was for calamity rehabilitation, to meet 30 per cent of state responsibilites for such projecsts during the past year. When compared to ¥100-billion or the annual average of damages during the 6 years, 1945-1950 inclusive, even this appropriation is not large enough. Only a much bolder financial policy to solidify the groundwork of the independent economy will make state capital work effectively after all. When we speak of using capital effectively the matter we are most concerned about is where investment is to be applied to. In fact, money is not always needed exactly where it is saved. A notable instance is that, in postwar Japan, recovery in the consumption phase has excelled that in basic industries. Why should this be so, when we compare this with the rehabilitation programs in Germany where productive facilities systematically are given first priority at the cost of consumption goods? All these matters too are presently being taken up in reference to the accumulation of capital.

One more characteristic feature of the Japanese economy is that capital is not always invested cumulatively. Take housing construction. It is an important form of capital accumulation. But Japanese houses being mostly wooden-built, fires each year destroy the valuable accumulation in unending succession. Fires number 15,000 to 18,000 annually, almost constantly from about 1925 up to the present. The damages were estimated in 1949 at ¥26,700-million, almost approaching the figure of ¥33,000-million expended for housing projects in the same year, though with the reservation that fires statistics include other items than houses. The instance given here is another case of capital accumulation being used in a very wasteful manner. The same may be said of the rehabilitation programs above mentioned. If riparian works were carried out on a more throughgoing scale, as in the Tennessee Valley Administration plans, to root out the causes of recurrent devastations completely, the yearly visitations of typhoons and floods would be doing less harm, except in rare cases beyond human control. This, however, is far from reality, again because adequate capital is not available. How much can be stored away from annual production? Where is the margin of the roundabout course to be found and how can its productivity that determines the margin be measured? These old questions that Böhm-Bawerk presented in expounding his theory of capital must still continue to be asked in the present Japanese economy. More than that, in view of the greater need for capital accumulation, these questions must be taken up the more seriously. To solve these questions under the prevailing complicated circumstances is the task of human wisdom.

To attain a well-balanced achievement, plans must be had.

Inasmuch as capital accumulation in Japan is the primary requisite for independence, it must be based and worked out on plans. For the present, however, we are not proposing policies. We are just trying to learn whatever can be learned by analyzing facts. In a practical discussion concerning this country, it is always helpful first to look into a problem as it relates to the characteristic feature of the Japanese economy before proposing policies. In discussing capital accumulaton this must be given special emphasis.

—Written in April, 1952—

A NOTE ON "LONG TERM CHANGES IN THE NATIONAL PRODUCT OF JAPAN"[1]

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I

In summer 1951, we attempted an estimate of a long term series of the national net product in Japan since 1878, the result of which is to be published.[2] This work was a preliminary one, and we conceded a large margin of error in the series estimated there, especially for the years before 1919, because our estimate for that period had to be an indirect one owing to the non-existence of basic data which are essential to the estimation of national products. From that time onwards we continued to make some improvement upon the preliminary estimate. It is the purpose of this essay to describe the revision made since that time in comparison with the first series and to explain the reason why the revision had to be made.

The former estimate was approached from the viewpoint of production, national income produced being estimated by dividing all industries into three sectors, namely, primary, secondary and tertiary industries, mostly according to Colin Clark's categories. This time we confined ourselves to the figures of the primary and tertiary sectors, while those of the secondary sector remain untouched inspite of their being obviously imperfect, because it would require too much time to arrange the data essential to the estimation of income produced in this sector. As for the wholesale price index which was used to deflate the national income series in current yen, some revision was made in the figures of early years. Since this work is in process of continuous improvement, the concluding figures will, of course, be left to the future.

It may, to begin with, be convenient for readers to illustrate the various series of long-term national income estimates of Japan in summarizing them. Figure I gives four main kinds of series in terms of real income which have been estimated by different authors by different approach up to now, and we juxtaposed our former series in comparison with them. All figures are in terms of quinqennial average except Clark's. Each series is deflated by its author's own deflator, the figures of which are adjusted to the same base 1928-32, except the series of the Cabinet Bureau of Statistics which is deflated by our revised index.

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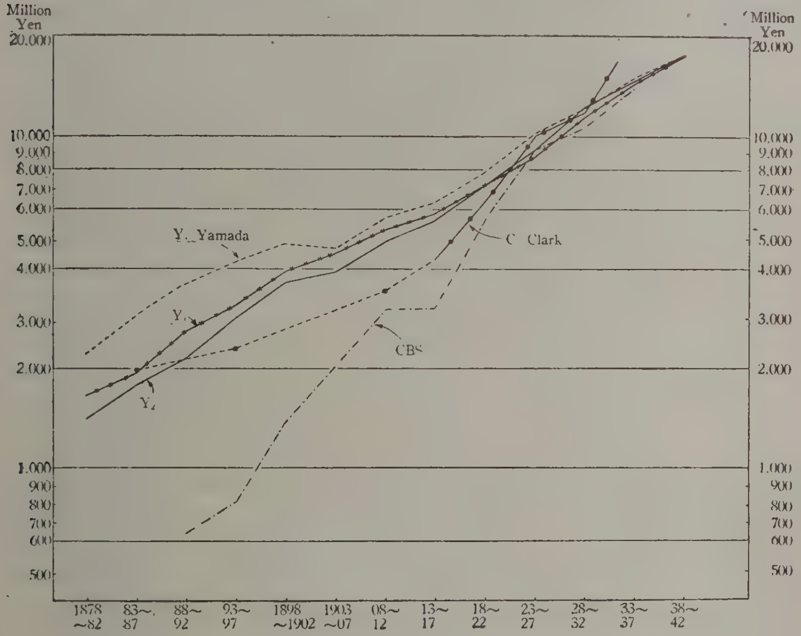
[1] The author is grateful for collaboration to all the members of the Japanese Economy Section of the Institute of Economic Research of Hitotsubashi University, in particular, to Messrs. Mataji Umemura and Tsutomu Noda.

[2] Shigeto Tsuru and Kazushi Ohkawa, "Long Term Changes in the National Product of Japan since 1878," which was presented to the Second Meeting of International Association for Research in Income and wealth.

Fig. I Comparison of Various Estimates of National Income Series of Japan.



The series of the Cabinet Bureau of Statistics was made in 1925 back to 1887 by utilizing an index based upon the changes in the so-called "Class C Taxable Income." This is cleary under-estimated to a great degree. Prof. Yuzo Yamada's series estimated in 1951 was taken from his book *Nihon Kokumin Shotoku Suikei Shiryo* upon which our work largely depends. Colin Clark's series, though scattered in early periods, was taken from his book *Conditions of Economic Progress*. Second Edition 1950. Our old series (Y_1) was shifted this time to the new series (Y_2) as illustrated in the figure. If we observe this figure roughly through the entire period under survey, we shall have a view that while C. Clark's series, when linked up the estimated scattered points, draws concave curve turning at the neighbourhood of 1910, our two series draw almost straight lines (exponential curves), though Y_2 is somewhat lower than Y_1 in the early half period. On the other hand, Yamada's figures are larger than ours through the entire period, and, in particular, in the earlier half period.

II

Table I gives the quinquennial averages (A) of net products in current yen in the primary sector in comparison with the former figures (B).

Table I Net Products in Primary Industry
(current million yen)

	Net Products		Net Income Ratios	
	(A)	(B)	(A)	(B)
1878–82	426	414	87.0	the same
1883–87	327	326	86.1	
1888–92	432	445	81.7	
1893–97	612	601	83.9	
1898–1902	932	927	84.3	
1903–07	1,141	1,136	82.4	
1908–12	1,403	1,405	82.2	
1913–17	1,636	1,634	78.6	77.8
1918–22	3,826	3,670	78.6	78.9
1923–27	3,503	3,194	74.2	70.6
1928–32	2,580	2,271	76.6	69.4
1933–37	3,084	2,829	77.4	70.2
1938–42	5,547	5,229	77.6	70.9

Net product in primary sector is estimated, as before, by the method of applying "net income ratio" to gross value produced. The minor revision for the years before 1918-22, was due to the improvement of price data. The more important revisions after the years 1918-22 were caused by new figures of net income ratio to agriculture. Formerly, a somewhat bold estimate was made of this ratio for the years before 1914, but we used

Professor Yuzo Yamada's figures of this ratio for the years 1914-1942 without revision. This time we revised his figures because we found that these figures are over-valued in cost items. It must be admitted that our estimate of net income ratios for the years before 1913 is still crude and leaves much room for improvement in the future, but this time no revision was made for the years of this period, because of the long time required to obtain better arrangements. For the years before 1931 Prof. Yamada's series is that of the National Research Institute of Agriculture[3] raised uniformly by five percent on the ground that the latter over-estimates the value of cost items. The figures of that Institute were estimated on the assumption that the overall average value of cost items per unit area is 15 percent under the average of Farm Economy Survey's data. But this assumption has no definite ground, and leads to under-estimation of the income ratio to be applied to the aggregate gross value of production. Prof. Yamada's adjustment was right in direction, but still his figures are under-valued. For the years after 1931 he uses the figures of income ratios as calculated from Farm Economy Survey by a downward adjustment of uniformly ten percent on the ground that the figures of this period must be linked with those of the former period above mentioned. This adjustment was due to his judgement that the figures of income ratios as calculated from the Survey are uniformly over-valued. We think this judgement is not correct, and adopted the figures of the Survey without adjusting for the years 1921-42. The net income ratios shown in Table 1 give the new (A) and the old (B) figures in quinquennial averages. In the calculation these figures are applied year by year.

It is admitted that the sampling of Farm Economy Survey has certainly an upward bias as regards the scale of acreage cultivated by a farm. But according to our analysis of the results of this Survey, the tendency of net income ratio to decrease is less than that of the scale of acreage cultivated. We are inclined to assume a contrary tendency, though in a slight degree. We think, however, that it is reasonable to adopt the figures calculated from the Survey's data, because the contrary tendency above mentioned is not so distinct as observed by dividing the data into several agricultural zones. This is the analytical ground on which our revision was made.

As a result, our new figures are somewhat smaller than the old ones for the years of the later periods.

III

As regards the tertiary sector we made a rather radical revision. Table II gives the quinquennial averages (A) of net products in current yen in the tertiary sector in comparison with the former corresponding figures (B). Series (A) becomes considerably smaller through the years between 1878-82 and 1918-32, and larger for 1923-27 than the (B) series. After that period no revision was made.

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[3] The National Research Institute of Agriculture (Nogyo Sogo Kenkyujo), "Kokumin Keizai ni okeru Nogyo Shotoku no Yakuwari," *Nogyo Sogo Kenkyu*, October 1948.

The estimation of the net product of the tertiary sector is difficult, because one cannot directly utilize the gross production value. For the years after 1930 there are official estimates by the Economic Stabilization Board. For the years 1919-1929, there is Prof. Hijikata's estimate, though somewhat inaccurate. These estimates may be utilized for these years, but before 1918 we have no essential data to estimate directly.

For the years 1878-1918 there are three kinds of indirect estimating methods. (a) A method depending on the assumption that the series of income produced per occupied population in tertiary industry has some close relation with the series of wage rate and commodity price. (b) A method depending on the assumption that the former has some close relation with the series of income produced per occupied population in primary and secondary sectors. (c) A method not depending on such assumptions and which estimates

Table II Net Product in the Tertiary Industry
(current million yen)

	(A)	(B)	(C)
1878-82	163	198	411
1883–87	183	199	403
1888–92	235	372	503
1893–97	357	472	699
1898–1902	569	733	1,043
1903–07	827	1,152	1,385
1908–12	1,193	1,428	1,763
1913–17	1,664	1,873	2,285
1918–22	4,470	4,648	5,627
1923–27	5,971	5,971	6,577
1928–32	5,978	5,978	5,978
1933–37	7,523	7,523	7,523
1938–42	13,564	13,564	13,564

firstly, the aggregate national product by other data such as income tax statistics and obtains the income produced in the tertiary sector as the residuum by subtracting income produced in goods producing sectors from the aggregated series.

Colin Clark estimated the income series of Japan in secondary and tertiary sectors in early years by the index of real wages. Prof. Yamada estimated the income series of the tertiary sector before 1929 by carrying back ¥650, the income amount per occupied population in this sector in1930, the census year, by the geometrical average series of the wage index and wholesale price index to the earlier years. These are examples of the (a) method. The Cabinet Bureau of Statistics made a detailed estimate for the year 1925 and carried the estimate back to 1887 by utilizing an index based on the changes in the so-called "Class C Taxable Income" as mentioned above. Recently, Prof. Yamada tried an estimate of the aggregate national inome distributed for early years by utilizing the changes of Pareto coefficients calculated by Prof. Shiomi. These are examples of the (c) method.

We have tested the three kinds of approach. First, we made an approach similar to Prof. Yamada's method belonging to (a), an estimate based on ¥683, the income produced per occupied population in the tertiary industry in the year 1930, and carried it back to 1887 by utilizing series of arithmetic mean of the wage index and wholesale price index. The result obtained is shown in Table II as (C) series, which is unsatisfactory when checked against various relations with other data.

Next, we tried an eclectic method of combining the use of Pareto coefficients, which is similar to Prof. Yamada's method belonging to (c) approach with adjustment by utilizing the series of wage and price indexes. The result obtained was judged as better than the (C) series, and adopted in the former paper, which is shown as (B) series in Table II. But afterwards we found that there are several points which prove this series unsatisfactory as explained in detail in the following section. Therefore, we finally adopted another eclectic method of combining the (a) and (b) approach above mentioned. This estimate was made on the assumption that the changes of income produced per gainfully occupied population in tertiary industry has a close correlation with the changes of those in the primary and secondary sectors and with the series of the wage index. The calculation was made as follows: taking 1921-1929 as base period, the net product per gainfully occupied population in goods producing sectors in this base period is estimated at ¥319 a year in the average. The corresponding figures in the tertiary sector is estimated at ¥659 by adjusting Prof. Hijikata's series. For the years between 1878 and 1918 we prepared an average series of the wage index and index of income produced per gainfully occupied population in the goods producing sector, taking 1921-29 as 100, and carried back ¥659 to the early years up to 1878 by utilizing this average index. The result obtained was reduced to an aggregate amount by multiplying the number of persons gainfully occupied in that sector. This is the series (A) in Table II.

This series may be better than series (C) at least in two ways; namely (1) the former adopts pq (income) series instead of p (price) series, which is understood as the main cause of the over-valuation in the latter, and (2) in the former the base was broadened and includes earlier years, though sacrificing somewhat the degree of accuracy by abandoning the census year. We checked the accuracy of this method by applying similar calculations to the period 1930-1939 taking the base period as the same. Table III gives the estimated figures (A) in comparison with the figures obtained by the direct method (B). The percentage of (A)/(B) is not very unsatisfactory, being between 87 and 101, though in the average (A) is under-estimated by about 10 per cent. Therefore, we adjopted this series as relatively reliable as far as there existed no remarkable change during these periods. The series named (B) in Table II is generally over estimated in comparison with this for the years before 1918-22.

For the period 1919-1924, some revision was made by adjusting Prof. Hijikata's data to the series of the following years. For the period 1930-42 no revision was made.

Table III Income Produced in Tertiary Sector 1930–1939
(current million yen)
—Comparison of the results of indirect and direct methods—

	(A) Indirect	(B) Direct	(A)／(B)
			%
1930	5,731	5,812	98.6
1931	4,912	5,640	87.0
1932	5,200	5,845	89.0
1933	5,834	6,400	91.1
1934	6,139	6,811	90.1
1935	6,758	7,226	93.5
1936	6,990	7,977	87.6
1937	7,942	9,198	86.3
1938	9,173	10,210	89.8
1939	11,915	11,811	100.9

IV

We must explain why the series (B) was abandoned. The method we tried in the former paper was in principle utilizing the Pareto coefficients to estimate the total income under tax-exemption level for the years 1887-1929, but for the years before 1887 our method was still more indirect which was a combination of the ratio method similar to that of the (A) series and extrapolation method. Since the accuracy of the latter depends largely upon the results of the former method, we confine ourselves to explain the former.

When determining to adopt that method, we relied upon the checking of figures by applying the income statistics by direct method for the following period 1919-1939. For the four years 1919, 1931, 1932 and 1934 for which the value of log A is abnormally small, we found that the estimated figures were remarkably under-valued. But for all years except these four years, we found that the estimate was not very unsatisfactory, the average of differences between the figures of the indirect and the direct method being nearly 0 in average, if we assume that the reduction rate is 20 per cent, by which it was thought necessary to reduce the aggregate amount of income under tax-exemption level, owing to the bending of Pareto's line around the neighborhood of the modal income. If this is true, the taxed income statistics is sufficiently reliable to be depended upon for estimating national income. However, it was found afterwards that the relative consistency which was observed between the two figures was rather of accidental nature. The errors were due to two assumptions. First, we assumed that the Pareto coefficients calculated by Prof. Siomi for the number of *households* may be substituted for the coefficients to be calculated for the number of *persons* without serious errors. Next, we assumed that Prof. Yamada's simple method of calculating the average income level of persons below tax-exemption level was without serious errors. He simply takes geometrical mean of the minimum income of non-taxed persons and that of taxed persons. But both assumptions were improper.

Table IV will clarify the degree of error in the first assumption. It is clear that the results obtained are over-estimated by about 40-50%.[4]

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[4] The formula of Pareto's equation by which we are able to obtain the number of persons between income ¥ a and income ¥ b and the average income, leads to the following equation, if we assume $a=x_2$, and $b=\infty$ ($\bar{x}_2$ denotes average income).

$$x_2=\frac{a}{a-1}x_2$$

If we take x_2 as expressing the level of income which the lowest income-earner obtains, viewed from the standpoint of including persons under tax-exemption level, we reach the following equation, because X (aggregate amount of income) equals $N\bar{x}_2$ (N denotes the total number of persons getting income).

Table IV Estimated National Income
from Pareto Coefficient
—two examples—

	unit	1929	1930
Number of Households (H)	thousand	11,971	12,706
Number of Occupied Persons (N)	thousand	28,913	29,619
Minimum Income estimated from H (x'_2)	yen	258.07	230.25
Total Income estimated from H (X)	million yen	7,623.9	7,345.3
Minimum Income estimated from N (x^2)	yen	164.58	183.60
Total Income estimated from N (X_p)	million yen	13,290.9	14,238.9
Pareto Coefficient α'		1.6813	1.6619
log A'		11.13298	11.02969
X_p/X		1.46	1.50

$$X=N\frac{\alpha}{\alpha-1}x_2$$

We assume that this general equation holds true for data for households. For simplicity, we assume that a household consists of p persons getting income in the average, and express the aggregate number of households as H . The calculated available Pareto's equation from household data is expressed as follows:

$$\log H=\log A'-\alpha'\log x'_2 \quad \text{or} \quad x'_2=\left(\frac{A'}{H}\right)^{\frac{1}{\alpha'}}$$

If we treat the figures of α' , A' in the following equation as if they were calculated from the data of persons,

$$X=\frac{\alpha'}{\alpha'-1}\cdot x'_2\cdot H=\frac{\alpha'}{\alpha'-1}\cdot\left(\frac{N}{H}\right)^{\frac{1}{\alpha'}}\cdot H \tag{1}$$

we get

$$X_p=\frac{\alpha'}{\alpha'-1}\cdot\left(\frac{A'}{H}\right)^{\frac{1}{\alpha'}}\cdot H_p \tag{2}$$

where X_p denotes the pseudo amounts of aggregate income obtained when treated as such. Dividing equation (2) by equation (1), we get

$$\frac{X_p}{X}=p^{1-\frac{1}{\alpha'}}$$

Thus it is theoretically proved that we are obliged to over-value X by $p^{1-\frac{1}{\alpha'}}$ times, if we treat data from households as if it were from persons without serious errors. The value of X_p/X appears 1.44 if we take the rough average values of p and α' as 2.43 and 1.70.

Prof. Yamada also makes the first assumption, therefore we cannot clarify the degree of error according to his simple method. But the following examples will help to understand the situation. The estimated total income distributed among persons below tax-exemption level under the first assumption is 10,391 in 1927 and 10,021 in 1930 (million yen) in Prof. Yamada's case and 10,834 in 1927 and 11,953 in 1930 in our case, which calculation was made by equations mentioned in the footnote. It may be admitted that the simple method probably will not affect the results in any definite direction.

Hence, we must ask why the method over-estimating figures by 40-50 percent turned out favorable at the checking. The reason may be the fact that taxed income statistics always under-estimated and that this under-estimation was covered by the over-estimating method. Table V will illustrates this situation. In this table the total income distributed (Yt) obtained from the above indirect method is contrasted with the total income produced (Ys) obtained from the direct method, both in a three years average. Of course Yt must be somewhat smaller than Ys from theoretical reasons, but the gap is very large. We calculated Yt series by the equation mentioned at the footnote, excluding errors due to the first and second assumptions. Thus the main differences may be understood as due to the under-valuation in statistics of taxed income. As far as these errors are not uniform we are led to the conclusion that these taxed income statistics are not adaptable to estimate total national income.

Table V Comparison of National Income by Indirect and Direct Methods (1919-1939) (million yen)

	Yt	Ys	Ys/Yt
1919-21	7,060	11,992	1.699
1922-24	9,081	11,783	1.298
1925-27	9,478	12,865	1.357
1928-30	9,044	12,450	1.377
1931-33*	—	—	—
1934-36	9,330	15,257	1.635
1937-39	13,264	23,959	1.806

* No calculation because of insufficient data

Now let us summarize the estimated figures of national income produced (A) at current yen in Table VI in comparison with those (B) of the former estimate, where the national income produced in the secondary sector is reproduced without revision from the former report. Through revision the long-term upward tendency of the total series is somewhat strengthened as the early years' figures show a generally greater decrease than those of later years. The percentage reveals the ratio of each sector for each period. The ratio of the primary sector is somewhat increased and that of the tertiary sector is lower in the earlier years in comparison with the figures of the former estimate.

In the former paper, the wholesale price index was used as deflator for no other reason than that it is the only available price index which can be linked through the entire period under survey. For the years 1893-1942 a linked index could be used, utilizing the three kinds of wholesale price indexes of the Bank of Japan with some modification. But for the years 1878-1892 we had to prepare our own index as there was no reliable price index for this period. The data of commodity prices made use of has been checked. This time we revised the price index for the years 1878-1886 alone, leaving untouched the remaining part of the other periods, though there may be some part to be revised in future. The figures of the five years' average were revised from 41.7 to 46.3 in 1878-82, and from 31.6 to 33.8 in 1883-87 taking the base period as 1928-32. For the years 1878-82, which is the first inflation period in Japanese capitalism, the price index used was obviously under-valued. For example Prof. Hijikata's

Table VI National Income Produced

(current million yen) (%)

	Total (A)	Total (B)	Secondary	Primary	Secondary	Tertiary
1878–82	659	682	70	64.7	10.6	24.7
1883–87	600	612	87	54.5	14.6	30.9
1888–92	797	946	129	54.2	16.2	29.6
1893–97	1,191	1,296	223	51.4	18.7	29.9
1898–1902	1,922	2,081	421	48.5	21.9	29.6
1903–07	2,482	2,802	514	46.0	20.7	33.3
1908–12	3,309	3,546	713	42.4	21.5	36.1
1913–17	4,518	4,725	1,725	36.2	27.0	36.8
1918–22	11,186	11,208	2,890	34.2	25.8	40.0
1923–27	12,598	12,789	3,124	27.8	24.8	47.4
1928–32	11,840	11,531	3,282	21.8	27.7	50.5
1933–37	15,698	15,443	5,091	19.6	32.4	48.0
1938–42	32,352	32,034	13,241	17.1	40.9	42.0

index which Prof. Yamada used as his deflator for this period is too low, being 33 in comparison with 29 for the following period 1883-87, taking the base year above mentioned. Our revision will better express this inflation period.

Table VII gives the wholesale price index which was used as deflator with the price index for agricultural commodities, that of non-agricultural commodities and the rice price index, all in quinquennial averages. These sub-group indices were newly compiled, utilizing the commodity price data of the wholesale price index. The price index for agricultural commodities has a stronger upward trend than that of non-agricultural commodities.

The series of real net national product (A) which was calculated by deflating[5] the series of nominal net product given in Table I is shown in Table VIII in comparison with the old one (B), in quinquennial averages. By the revision the long-term increasing tendency of the real national income was somewhat strengthened, on the ground that the figures for the earlier years were generally decreased. Roughly, the national income of Japan increased in real terms about twelve times during the sixty years preceding the Second World War.

Table IX gives the series of real net product produced in each sector. The series of primary industry was calculated by using the wholesale price index for agicultural products, that of the secondary industry by using the

Table VII Indices of Wholesale Prices (1928-32=100)

	General	Agricultural	Non-agricultural	Rice
1878–82	46.3	33.1	45.0	36.1
1883–87	33.8	24.1	33.1	22.7
1888–92	37.1	30.4	34.2	27.2
1893–97	41.7	39.2	41.6	37.2
1893–1902	53.1	47.8	53.5	49.2
1903–07	63.7	59.4	63.8	57.0
1908–12	68.5	64.0	68.9	64.2
1913–17	81.2	71.1	82.6	66.9
1918–22	150.4	137.6	160.9	150.6
1923–27	139.6	131.7	140.0	148.0
1928–32	100.0	100.0	100.0	100.0
1933–37	107.4	106.9	107.0	111.0
1938–42	184.6	182.8	183.8	176.9

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[5] Strictly speaking, our series in real terms is not valued at constant yen. The deflator used is not uniform in the formula, but the main part of the index is calculated by Laspeyres formula. Therefore our series obtained in real terms is not simply priced by the base year period, in principle, as in the case of applying the index of Paasche formula.

Table VIII Real National Income Produced

(Constant million yen in 1928-32 prices)

	National Income		Index(1878-82=100)	
	(A)	(B)	(A)	(B)
1878-82	1,407	1,645	100	100
1883-87	1,784	1,932	128	117
1888-92	2,140	2,557	154	155
1893-97	2,845	3,089	204	188
1898-1902	3,618	3,914	260	238
1903-07	3,886	4,388	279	266
1908-12	4,813	5,175	345	315
1913-17	5,554	5,831	398	354
1918-22	7,087	7,129	508	433
1923-27	9,081	8,753	651	532
1928-32	12,089	11,543	867	701
1933-37	14,564	14,327	1,045	870
1938-42	17,609	17,413	1,263	1,057

non-agricultural one and that of the tertiary industry by using the general wholesale price index. The real product of each sector was increased by 2.4, 47.5 and 21.1 times in that order respectively during the sixty years.

In order to judge the pattern of growth, we have calculated in Table X the rate of change of income produced in total (A) and in each sector between overlapping decades in terms of average rates per year, and juxtaposed the figure for the total in the former estimate (B). From series (A) we find that the rate of change per year is between 2.0 and 5.7 through the entire period, and that for the latter half period the figure varies slightly at over 3.0 except the last period where the figure is abnormally high, which is certainly due to the war economy mobilization introduced in that period.

For the earlier half period the variation in the rate of change is relatively large, for which we cannot give any substantial explanation because the method of estimate is rather weak in this perod. As far as the latter half period is concerned, it may be admitted that the rate of growth of real output in the aggregate does not show any cyclical movement, despite the world-wide crisis in the 1930's.

From the standpoint of international comparison, these figures of the

Table IX Real National Product in Each Sector
(Constant million yen, 1928-32 price)

	Primary		Secondary		Tertiary	
1878–82	1,267	100	151	100	351	100
1883–87	1,360	107	269	178	548	156
1888–92	1,410	111	380	252	634	181
1893–97	1,560	123	530	351	850	242
1898–1902	1,955	154	787	521	1,069	325
1903–07	1,926	152	802	531	1,292	368
1908–12	2,189	173	1,033	684	1,736	495
1913–17	2,291	181	1,421	941	2,051	584
1918–22	2,790	220	1,797	1,190	2,851	812
1923–27	2,671	211	2,249	1,489	4,314	1,229
1928–32	2,584	204	3,357	2,223	6,151	1,752
1933–37	2,889	228	4,739	3,138	6,990	1,991
1938–42	3,086	244	7,163	4,747	7,388	2,105

Table X Rate of Change of National Income
per Year between Overlapping Decades

	Total		Primary	Secondary	Tertiary
	(A)	(B)			
1878–87 to 1883–92	3.7	4.6	1.1	9.1	5.6
1883–92 to 1888–97	5.0	4.7	1.4	7.0	4.7
1888–97 to 1893–02	5.4	4.4	3.4	7.7	5.3
1893–02 to 1898–07	2.6	3.5	2.0	3.8	3.3
1898–09 to 1903–12	2.0	2.9	1.2	2.9	5.1
1903–12 to 1908–17	3.0	2.9	1.7	6.0	4.5
1908–17 to 1913–22	3.3	3.3	2.6	5.6	5.3
1913–22 to 1918–27	3.1	4.2	1.5	4.7	7.9
1918–27 to 1923–32	3.5	5.3	−0.8	6.7	7.9
1923–32 to 1928–34	3.2	5.0	0.8	7.6	4.7
1928–37 to 1933–42	5.7	4.0	1.8	8.0	1.8

rate of growth may be relatively high,[6] caused by the extraodinary high rate of growth in the secondary sector. It must be, however, recognized that a similar high rate of growth in the tertiary sector was also an essential cause. The growth of the primary industry is not so low in international comparison as has often been insisted on by many authors. In particular, this is true for the early years. But its rate of growth is relatively low compared with the other industries.

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[6] It is admitted that the series we obtained contains certainly several factors which may lead to the upward bias, owing to the rapid industrialization and urbanization. Allowances must be made for these factors. However, we have not yet found any good practical method for calculating these biases.

Table XI gives the rate of change of national income per gainfully occupied population (I) and per total population (II). We justaposed the figure of the rate of change of gainfully occupied population and that of the total population. We calculated series (I) and (II) by the short-cut method, subtracting (O) and (T) in Table XI from (A) in Table X. It is conceded that the data from which series (O) was calculated may not be very reliable. We revised Prof. Hijikata's series of gainfully occupied population upon which Prof. Yamada mainly depends, but there is some doubt as regards these data which must be cleared up in the future. The relatively large variation of series (O) and in consequence that of series (I) too, particularly in the earlier period, cannot be explained yet.

Table XI Rate of Change of National Income
per Head between Overapping Decades

	National Income		Population	
	(I) Per occupied Population	(II) Per total Population	(O) Gainfully occupied	(T) Total
1878–87 to 1883–92	2.3	2.5	1.4	1.2
1883–92 to 1888–97	3.8	3.9	1.2	1.1
1888–97 to 1893–02	4.5	4.4	0.9	1.0
1893–02 to 1898–07	1.9	1.4	0.7	1.2
1898–07 to 1903–12	1.5	0.7	0.5	1.3
1903–12 to 1908–17	2.6	1.6	0.4	1.4
1908–17 to 1913–22	2.9	2.0	0.4	1.3
1913–22 to 1918–27	2.4	1.9	0.7	1.2
1918–27 to 1923–32	2.7	2.1	0.8	1.4
1923–32 to 1928–37	2.4	1.7	0.8	1.5
1928–37 to 1933–42	4.7	4.7	1.0	1.0

THE DEVELOPMENT OF WARTIME REPRODUCTION THEORIES IN JAPAN

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I

Following the invasion of Manchuria in 1931, the Japanese economy underwent measures for a great expansion of armament production capacity through inflation (the gold embargo was abolished in 1930 but again enforced in 1931). From about 1933, armament inflation became apparent, necessitating measures for quasi-wartime organization. This was clearly indicated by the successive promulgation of various control regulations from 1936. In 1937, Japan entered a state of war with China, but wartime control was as yet carried on principally in the sphere of prices until 1939. Distribution control was adopted in 1940, following the appearance of a food shortage, and the Japanese economy then clearly changed to wartime organization. The promotion of armament production through inflation still continued, but the military demand still exceeded production capactiy following the extension of the war, the deficit being covered by a reduction of production for civilian purposes. Thus, normal reproduction of the Japanese economy became impossible, and reproduction on a reduced scale developed. This reproduction on a reduced scale started in the autumn of 1939, and from that time production for civilians was reduced. However, owing to the continued expansion of armament production, reproduction was on an enlarged scale from the viewpoint of the whole economy. But after 1941, the expansion of armament production became impossible, and the Japanese economy indicated clearly the reproduction process on a reduced scale. Japan thus progressed towards the catastrophe of 1945. After 1944, from the economic point of view, Japan already experienced confusion, which could not be managed.

II

With the background of the above mentioned economic development, the wartime reproduction theories or the theoretical analysis of the reproduction structure of the wartime economy started to be discussed among Japanese economists.

Before the wartime reproduction theories became an important subject of the economics in this country, there had been two controversies. The dispute as regards the wartime reproduction process was regarded as a continuation of these or their recapitulation. One of these two controversies was the dispute as regards the armament inflation which developed from 1932 to 1934; the other was a series of deliberations on the reproduction theory which was introduced for the first time in Japan in 1922 by an essay of Dr. Hajime Kawakami named *Criticism of the Theory of Capital Accumulation of Dr. Fukuda* in a periodical *Shakai-Mondai-Kenkyu* (*Study of Social Problems*) March-June, 1922.

The first dispute concerning armament inflation was meant as a warning against the wartime economy, pointing out the difficulties arising from inflation, the possibility of which was anticipated in 1931 when Japan started the invasion of Manchuria. Leaders in the dispute were Mr. Tsunao Inomata who was an economist of the Labour-Farmer school (*Roono-ha*) and was later arrested in the so-called Labour-Farmer school case, and Mr. Shintaro Ryu who wrote a number of economic articles from the Marxian viewpoint in the thirties, but now is critical of liberalism. We have no space to dwell on this dispute in detail. The theoretical substance of the dispute was, as mentioned before, to clarify generally and theoretically the factors causing armament inflation and its process and effects on the economy as a whole. However, this dispute was interrupted about 1934 by the arrest of Mr. Inomata, and the theoretical meaning of the dispute later developed in wartime reproduction theories under a different form.

The second dispute developed in the form of deliberations as regards the theory of wartime reproduction rather than that of normal reproduction, and was started by the essay of Dr. Hajime Kawakami on *Criticism of the Theory of Capital Accumulation of Dr. Fukuda* (1922). However, it was *Introduction to the Diagrammatic Analysis of the Reproduction Process* (1931) by Mr. Moritaro Yamada, (at present professor of the Tokyo University) that took up Marx's theory of the reproduction process as a subject and introduced to this country the whole of the theories in Western Europe which appeared after Marx.

The wartime reproduction theory developed as a summary of the above theories under the necessity to meet the actual economy.

III

The explanation of the reproduction scheme in the wartime economy and the application of the reproduction theory to wartime economy started from attempts by Rosa Luxemburg in 1913 and Nikolai Bucharin in 1922 from the viewpoint of international development of the reproduction theory. Luxemburg dwelled on this problem in Section 32, Part III of her book *The Accumulation of Capital* published in 1913, and Bucharin in the preface of his book *The Economics in the Transformation Period* published in 1922.

In Japan, the wartime reproduction theory started from the introduction by Mr. Shintaro Ryu of the diagram of wartime reproduction process of Rosa Luxemburg and that of the diagrammatic analysis of Bucharin by Mr. Hiromi Arisawa. It developed gradually from criticism of these to original analysis through diagrams to grasp in abstract and in general the various factors which make possible reproduction in the wartime economy. Literature worthy to be mentioned are as follows: —

Shintaro Ryu, The Problem of Armament Production and the Reproduction Process, *Journal of the Ohara Social Problem Research Institute*, No. 296, June 1935; Hachiro Noguchi, Diagram of Reproduction and Armament Industries, *Economic Review*, Vol. 3, No. 9, June 1936; Yoshizo Yoshida, Basic Concept of an Analysis of War Economy—The Problem of Armament Production and Reproduction Process of Social Capital as a Whole, *Free Trade*, Vol. 19, No. 11 and No. 12, December 1937; Kazuo Nonomura, History of the Theory of Japanese Defense Economy Organization, *Circular of the South Manchurian Railway Co.*, Aug. 1940; Misaburo Kawasaki, Reproduction Scheme of the Wartime Economy, *Fundamental Problems of the Wartime Economy*, published by the Kaizo-sha, December 1948, pp. 2-26.

Discussions concerning wartime reproduction were carried on in the form of disputes among many economists. Following the development of the wartime economy, political suppression was strengthened, and the study of the wartime reproduction process which aimed ultimately to establish a theory for the criticism of the Japanese wartime economy was interrupted. The development of the theory of wartime reproduction lasted only for a short period from 1935 to 1940: during this period, the arrest of members of the Japan Proletarian Party (Nihon-Musan-To), General Council of Trade Unions, the left-wing of the Japan Farmers' Associations and the Labour-Farmer school occurred in 1937; the General League of Trade Unions (Sodomei) was dissolved in 1940; the so-called Planning Board (Kikaku-in) case arose in 1941; in 1942 the case of Hidemi Ozaki and the Research Department of the South Manchurian Railway Co. occurred. The analysis of wartime reproduction was thus suspended in about 1940, and only flattering and optimistic views concerning developments were allowed.

The analysis of wartime reproduction in Japan thus had to remain unpropitious. Its results may be mentioned as follows: The dispute started from a discussion of the introductory concept in the diagrammatic analysis of the wartime reproduction process such as whether the armament industry belongs to department I (production of production means) in the theory of reproduction process, or to department II (production of means of consumption), or whether it constitutes another specific department; these discussions only yielded positive analysis by Mr. Misaburo Kawasaki, apart from deliberations as to whether a diagram should be made by two department as in the classic diagram of Marx or by three departments including one of the armament industry department (however, there may be objections against my estimate of the results).

A brief introduction of these two results will be given below.

IV

The opinion that armament industries belong to department I is represented by Mr. Hachiro Noguchi. He stated that the problem concerns the metal, machinery and chemical industries which produce armaments but at the same time manufacture production means. The armament industry is a part of these industries, but it is a special industry having particular form of value realization in department I. (Hachiro Noguchi, Diagram of Reporoduction and Armament Industries). His concept is based on the theory that the natural form of armaments is similar to means of production. But armaments are not always produced by the metal, machinery and chemical industries, or the production branch of means of production. This contradiction will not be countered by his argument.

The theory of Mr. Noguchi that the armament industry belongs to department I was connected with the idea that the reproduction process of the wartime economy can only be grasped by a diagram divided into two departments, and that it is wrong to diagrammatize wartime reproduction into more than three departments. It poses the problem concerning the division of departments.

This problem started from deliberations as to what department armament production should belong, although there also was the criticism by Professor Moritaro Yamada of the theory of Rosa Luxemburg on gold production. Among the disputants, we may distinguish two tendencies. The one group maintained the absolute validity of two departments. The other group advocated that the division into two departments is well recognized, but that there exists no absolute validity of a division into only two departments; the necessity of a division into two departments means a division into more than two departments at least when the reproduction process is a subject of discussion. The latter group often approved and advocated a division into more than two departments if necessary. For convenience, we may divide the disputants into a group advocating the absolute validity of two departments and a group leaving open the possibility of more than two departments.

The representative of the former group is Mr. Moritaro Yamada, and his opinion is sustained by Mr. Hachiro Noguchi (the pen-name of Mr. Norio Moriya), Mr. Mitsuyoshi Sakamoto, etc. As regards the latter, we can point out Mr. Misaburo Kawasaki, Mr. Yoshizo Yoshida, etc.

As regards the grounds for the absolute validity of the two departments theory, there is, firstly, the formal reason or the presentation of proof by literature. These disputants refer to Marx, Lenin, and maintain the absolute validity of two departments theory through quotations in literature. Second, they present positive reasons for the absolute validity of only two departments. We shall call these substantial reasons. We shall examine the formal reasons and the substantial reasons as follows.

1. Formal Reasons

Marx in his *Capital*, Vol. III, Part 7, Chapter 49, stated as follows: "In Volume II we divided all capital into two great classes: Class I, producing means of production, and Class II, producing articles of individual consumption. The fact that certain products may serve as well for personal consumption as for means of production (a horse, cereals, etc.), does not invalidate the absolute correctness of this division in any way. It is, in fact, no hypothesis, but merely the expression of a fact." (Eng. ed., p. 974)

Mr. Moritaro Yamada in his *Introduction to Diagrammatic Analysis of Reproduction Process* advocated that the above quotation emphasizes the absolute validity of two departments. However, it is not proper to maintain this absolute validity only by this quotation. It is also possible to construe this quotation as testifying the validity of a division into more than two departments.

Professor Yamada further refers to Lenin's following two statements:

(1) "The starting point of consideration concerning the realization of products in capitalistic society is to divide two completely different forms of social products——means of production and means of consumption" (Lenin, *Criticism of the Romantic School of Economics*).

(2) "The necessity of dividing social production into two departments (means of production and means of consumption) was not explained by Mr. Tugan-Baranowsky. But according to the correct opinion of Mr. Bulgakov

only this division has the most theoretical meaning in the dispute on the theory of markets" (Lenin, *Memoirs for the Theory of Markets*).

The same can be applied to these quotation of Lenin as in the case of Marx. The statements of Lenin may mean "rigid adherence to the two departments theory" as Professor Yamada considers. But it cannot be maintained that they exclude as wrong division into more than two departments.

Thus, the quotation of Marx and Lenin which was presented as a ground for the absolute validity of the division into two departments by Professor Yamada may have a meaning against the theory of one department, but cannot be used against the possibility of more than two departments.

2. Substantial Reasons

There are two kinds of substantial reasons. The first is the way of thinking that the departments of social production are numerous but the relation of these departments in the reproduction process can be summed up as $I(v+m)= IIc$; the other is that the division into two departments indicates the extent of the development of production capacity. We shall examine these opinions in order.

(1) Assistant Professor Yoshizo Yoshida stated as follows:

"The ground for the absolute-validity of a division into two departments by Mr. Yamada is, in short, that in simple reproduction the relation between department I and other department is summarized as $I(v+m)= IIc$; in other words, the portion of products in department I which can be transferred into the other department is $v+m$ and this shall be equal to the aggregate c of the other department (Osaka University of Commerce, *Journal of Economics*, Vol. 18, No. 5, 1948).

This point presents a most important problem in the theory of reproduction process.

As is well known, the Marx's diagram of reproduction has the following construction.

$$\text{I.}\quad c_1+v_1+mk_1+mc_1+mv_1=P$$
$$\text{II.}\quad c_2+v_2+mk_2+mc_2+mv_2=K$$

There are the following three fulcra in this respect.

(1) c_1

(2) $v_1+mk_1+mv_1=c_2+mc_2$

(3) $v_2+mk_2+mv_2$

According to the opinion of Professor Yamada, the two fulcra of c_1 and $v_2+mk_2+mv_2$ are placed within the department; therefore, the conditions of reproduction are summarized as $v_1+mk_1+mv_1=c_2+mc_2$. Is this true?

We shall sub-divide department I into two sub-divisions. I_a represents the sub-division of means of production for department I and I_b the sub-division of means of production for department II. The reproduction scheme in this case will be as follows:

I_a. $c_1a+v_1a+m_1a$
I_b. $c_1b+v_1b+m_1b$
II. $c_2+v_2+m_2$

In this case, the conditions of reproduction must be the following three, even if c_1a and v_2+m_2 are placed respectively within the department.

(1) $v_1a+m_1a=c_1b$
(2) $c_1b+v_1b+m_1b=c_2$
(3) $v_1a+m_1a+v_1b+m_1b=c_2$

(1) indicates the relation between I_a and I_b in department I, (2) the relation between I_b and II, and (3) the relation between the whole department I and department II. In this case, even supposing that c_1a and v_2+m_2 can respectively be placed within the department, c_1b cannot thus be fixed. A solution is only realized by exchange with c_2 of department II, as c of department I is not always realized by inside circulation in department I. Mr. Misburo Kawasaki states in this respect as follows :—"In case department I is not sub-divided, the one part of constant capital c which seems to be realized by the mutual transaction of capitalists within department I is, in reality, realized only by exchange with c_2 of department II. (Misaburo Kawasaki, *ibid.*, pp. 14-15).

Conversely, if the absolute validity of two departments is maintained and a division of the entire reproduction scheme into more than two department is not approved, the fact that a portion of c of department I is realized only by exchange with c of department II will not present itself. On the contrary, "if departments become numerous, the *new* relation between each production department which is beside the question in the case of two departments will become clear……The more detailed the theory of reproduction process becomes, the more numerous the division of production department" (Misaburo Kawasaki, *ibid.*, p. 8)

The above also applies to the diagrammatic analysis of wartime reproduction. It is important in this case to investigate the special characteristics of armaments as to utility value and its special role in reproduction, as well as the special characteristics in the process of realization of value. For this object, it is necessary to consider the armament industry as a special department in making a diagram.

(2) Professor Yamada maintains the absolute validity of two departments, and rejects a division into more than two departments, on the ground that "the division into two department constitutes a standard to indicate the degree of development of the production capacity." He writes as follows : "Why did Marx and Lenin lay stress on two departments? This will be due to the fact that the summing up into two departments constitutes a standard to indicate the degree of development of the production capacity.

The mutual co-relation of the natural viewpoint, the division into two departments and the expression of production capacity should be remembered" (Moritaro Yamada, *Introduction to Diagrammatic Analysis of Reproduction Process*, p. 26).

Is this true? If Professor Yamada's opinion is correct, there should be no means other than "the summing up into two departments" to indicate "the degree of development of the production capacity." However, "the degree of development of the production capacity" can also be expressed by c : v. If the diagram of the reproduction process is to express the degree of development of the production capacity and the production relation, as stated by him, it will be sufficient to utilize the construction of $c+v+m$. The explanation of Marx only emphasizes that the division into two departments must be directed from the viewpoint of utility value and natural forms and for the only purpose of analysis of the replenishment of raw materials.

As made clear by the above explanation, the absolute validity of two departments cannot be maintained in the theory of the reproduction process. Moreover, when the problem concerns diagrammatic analysis of the relation with the department of means of production, the department of articles of consumption and the department of armaments in the reproduction of wartime economy, the analysis will make no sense unless the above three departments are expressed by three diagrams.

As regards disputants maintaining that the armament industry belongs to department II, Mr. Seiichi Tanaka may be listed as a representative (Seiichi Tanaka, Digestion of National Bonds, *Journal of Economic Study of the Rikkyo University*, Vol. 1, No. 4, 1938). His attitude is correct. Armaments are not different from means of consumption from the viewpoint of utility value. Consequently, it will be correct to consider armament production as a subdivision of department II. But he refused to consider armaments as a specified department in the diagrammatic analysis, delegating them to a sub-division of department II. This is incorrect in view of what has already been mentioned.

The summary of the above is: the armament industry is a sub-division of department II from the viewpoint of the special characteristics of its utility value, but from the necessity to investigate its special characteristics as to utility value, its special rôle in the reproduction process and its special characteristics in the realization of value, it is correct to consider it as a special department in diagrammatic analysis. Mr. Misaburo Kawasaki and Mr. Yosizo Yosida tried to analyse the wartime reproduction process from this standpoint.

V

The theoretical analysis of the wartime reproduction scheme was permitted for a short period under the political and social conditions prevailing during the war. Consequently, the discussion was limited to analysis and disputes concerning preliminary concepts as explained in Section IV, and no structural analysis could be developed. Some positive development can only be found in the essay of Mr. Misaburo Kawasaki in 1940, written with the object of formulating methods of investigation of the wartime economy by the Research Department of the South Manchurian Railway Co. We shall briefly introduce his opinion as follows:

The wartime reproduction scheme can be represented by the following diagrams.

I. $c_1+v_1+m_1(k)+m_1(s)=P$ (Produktionsmittel)
II. $c_2+v_2+m_2(k)+m_2(s)=K$ (Konsumtionsmittel)
M. $c_3+v_3+m_3(k)+m_3(s)=M$ (Munition)

m(s) : Mehrwert (surplus value) taken from the capitalist by the state in taxes.

m(k) : Mehrwert (surplus value) directed for consumption.

In this case, the condition of reproduction is the following:

$$c_1+v_1+m_1(k)+m_1(s)=c_1+c_2+c_3$$
$$c_2+v_2+m_2(k)+m_2(s)=v_1+m_1(k)+v_2+m_2(k)+v_3+m_3(k)$$
$$c_3+v_3+m_3(k)+m_3(s)=m_1(s)+m_2(s)+m_3(s)$$

This abbreviates as follows:

$$v_1+m_1(k)+m_1(s)=c_2+c_3 \cdots\cdots\cdots (1)$$
$$c_2+m_2(s)=v_1+m_1(k)+v_3+m_3(k) \cdots\cdots\cdots (2)$$
$$c_3+v_3+m_3(k)=m_1(s)+m_2(s) \cdots\cdots\cdots (3)$$

As it is possible to compile formula (2) from (1) and (3), the conditions of simple reproduction in wartime reproduction are (1) and (3). These two formulas can be transferred into:

$$(v_1+m_1)-c_2=c_3 \cdots\cdots\cdots (1)$$
$$c_3+v_3+m_3=(m_1+m_2+m_3)-(m_1k+m_2k+m_3k) \cdots\cdots\cdots (3)$$

The formula (3) means—the limit of scale of armament production is fixed by the balance of the total surplus value of products in each department deducting individual consumption of capitalists.

Formula (1) means—within the above mentioned limit, the scale of armament production fluctuates in inverse proportion to that of the department producing articles of consumption, namely, the scale of constant capital for armament department is limited by the balance of the aggregate of variable capital and surplus value in the department producing means of production deducting the constant capital of the department producing articles of consumption.

The wartime reproduction scheme on an enlarged scale can be indicated by the following diagrams.

I. $c_1+v_1+m_1(k)+m_1(s)+m_1(c)+m_1(v)=P$
II. $c_2+v_2+m_2(k)+m_2(s)+m_2(c)+m_2(v)=K$
M. $c_3+v_3+m_3(k)+m_3(s)+m_3(c)+m_3(v)=M$

In this case, the conditions of reproduction on an enlarged scale are as follows:

$c_1+v_1+m_1(k)+m_1(s)+m_1(c)+m_1(v)=c_1+m_1(c)+c_2+m_2(c)+c_3+m_3(c)$
$c_2+v_2+m_2(k)+m_2(s)+m_2(c)+m_2(v)=v_1+m_1(k)+m_1(v)+v_2+m_2(k)+m_2(v)+v_3+m_3(k)$
$c_3+v_3+m_3(k)+m_3(s)+m_3(c)+m_3(v)=m_1(s)+m_2(s)+m_3(s)$

These can be abbreviated as follows:

$v_1+m_1(k)+m_1(s)+m_1(v)=c_2+m_2(c)+c_3+m_3(c)$ ·········(1)
$c_2+m_2(s)+m_2(c)=v_1+m_1(k)+m_1(v)+v_3+m_3(k)+m_3(v)$ ·········(2)
$c_3+v_3+m_3(k)+m_3(c)+m_3(v)=m_1(s)+m_2(s)$ ·········(3)

It is possible to compile formula (2) through formulas (1) and (3), therefore the conditions of reproduction on an enlarged scale in wartime reproduction are (1) and (3). These two formulas can be changed to the following formulas.

$(v_1+m_1-m_1(c))-(c_2+m_2(c))=c_3+m_3(c)$ ···············(1)
$c_3+v_3+m_3=(m_1+m_2+m_3)-(m_1k+m_2k+m_3k)-(m_1c+m_2c+m_3c)$ ···(3)

The formula (3) means—the scale of armament production is limited by the balance of the aggregate surplus value of each department deducting individual consumption and accumulation of capitalists. In more detail, the following two conclusions can be introduced : (1) Smaller individual consumption of capitalists will bring about a larger scale of the armament department. (2) As this department must be enlarged anyway, a reduction of accumulation will be found only in department I and II. But if accumulation in department I and II becomes nil, there develops a simple reproduction process. Consequently, the condition (1) is appropriate in any case, but the validity of (2) is relative.

Formula (1) means—the scale of constant capital in the armament department is limited to the balance of the aggregate variable capital and surplus value in department I, deducting constant capital accumulated and, further, total constant capital of department II. There is a correlative relation between department I and armaments and department II.

The author formulated an arithmetic diagram for each case, giving a certain numerical value c ,v ,m , etc. respectively, and investigated the actual process of quantitative circulation—realization of products. The author further investigated wartime reproduction on a reduced scale through an arithmetic diagram to find out conditions in the following cases: (1) when departmet II shows reproduction on a reduced scale as a result of simple reproduction in department I and enlargement of the armament departments;

(2) when department I and II show reproduction on a reduced scale, whilst armaments alone expand; (3) when department I shows reproduction on an enlarged scale and, at the same time, the armament department expands suddenly, thereby causing department II to experience reproduction on a reduced scale. He also investigated through an arithmetic diagram the effects of the enlargement of armaments when idle capacity exists.

As regards details, please refer to his work. His conclusion through diagrammatic analysis in the first case of reproduction on a reduced scale is as follows:

(1) Within a certain limit, it is possible to enlarge the armament department by a reduction in department II and to develop a smooth reproduction process. So long as simple reproduction in department I is a premise, reduction in department II is a condition for the smooth reproduction process despite the enlargement of the armament department. In this case, a decline in entire production value will be possible under certain relations of the composition of capital value between department II and the armament department. (2) Consequently, it is wrong to call in question the destruction of reproduction conditions in wartime economy simply and mechanically on the ground of a decline in entire production or in the production of articles of consumption.

If this be so, what is the meaning of the so-called "certain limit"? As already made clear in the section of simple reproduction, the limit is the point where the scale of the armament department or, in other word, the volume of military consumption, becomes equal to the balance of the entire surplus value deducting minimum individual consumption of capitalists. When military consumption exceeds this limit, a nation must collect the value necessary for the purchase of armaments from c or v in the diagram. It is clear that the collection from c results immediately in reproduction on a reduced scale. The collection of value from v makes reproduction of labour impossible as a direct effect (v in this case is assumed as the minimum value of articles of consumption necessary for reproduction of labour).

VI

The above is a summary of the theories of wartime reproduction process in Japan. The greater part of these theories is but an outcome of Marxist doctrine. Other theories only covered the general and abstract characteristics of the wartime reproduction scheme. It is rather impossible to grasp from these theories a consistent theoretical explanation of the various phenomena in the wartime economy which developed in Japan during the war. It is therefore natural that a study of this wartime economy had to be carried on from another dimension. We find here the weakness of the foundations of the Japanese wartime economy, as well as the poverty in theories which corresponds to the lack of freedom of speech and thought during the war. With the new international political and economic conditions, Japanese rearmament has become a political and economic problem in Japan. It is to be hoped that Japanese rearmament economics will not show the weakness experienced in the past. In Marxist economic circles in Japan, the poverty in methodology in the above stated sense has not yet been remedied.

REAL AND MONEY INCOME MULTIPLIER

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I. *A Dilemma in the Keynesian Dynamics*

The most conspicuous feature of the prevailing trade cycle theories since Keynes' *General Theory*, is that trade cycles or economic fluctuations have been largely explained in terms of such an aggregate concept as *real* national income. Although Keynes himself did analyze the fluctuations by an indicator such as employment or national income in wage-terms, the post-Keynesian has customarily adopted the real terms concept. This tendency seems to be unavoidable to a degree, as far as the consumption function, a keystone of the Keynesian economics, is concerned.

Why must it be expressed in real terms? If we assume a linear form of consumption function, the consumption function *in money terms* which connects money consumption expenditure C and money national income Y, will be

$$C = a + bY \quad \dots\dots (1)$$

where a and b=const. From this equation, we can derive

$$C/Y = b + a/Y \quad \dots\dots (2)$$

in which is involved a false implication that a particular average propensity to consume will correspond to a given *money* income. However, provided that no money illusion exists among consumers, it will be more plausible to deal with the average propensity to consume as a particular function of *real* income $\left(\frac{Y}{P}\right)$, i.e.,

$$C/Y = \beta + \alpha\Big/\left(\frac{Y}{P}\right) \quad \dots\dots (2')$$

If we transform (2′) into the following form,

$$\left(\frac{C}{P}\right) = \alpha + \beta\left(\frac{Y}{P}\right) \quad \dots\dots (1')$$

the *real consumption function* will be obtained, which represents the ordinary Keynesian way of thinking.

Once the consumption function, the nucleus of the Keynesian economics, however, has been expressed in real terms, it will naturally represent all other function too in real terms. Thus the Keynesian economics could not but follow the way towards the *real output dynamics*.[1] Nevertheless, the multiplier process itself, even though derived from the real consumption function, is essentially a *monetary phenomenon*, because the multiplier sequence is nothing but a self-expanding process of monetary expenditures and even when a change of the real output should not move correspondingly, the price level would increase as if it were a variant in a more general sence of the multiplier process. Nevertheless, it is a serious contradiction that the consumption function is usually composed in real terms. Notwithstanding the fact that the 'multiplier rolling' is a monetary phenomenon, the consumption function, the computing origin of the above, is obliged to wear a *real* garment, in order to maintain the *stability* of the function. The trade cycle is now analyzed largely in terms of real output, in spite of the concurrent severe fluctuations of prices. The exposition of price fluctuations is treated as if it were a causally isolated phenomenon from the multiplier process, although both are actually interwoven with each other.

If output follows behind the effective demand faithfully like a shadow, and if the reversed Say's law that 'the demand creates its own supply' is valid, the Keynesian real output dynamics may quite naturally be constructed on the basis of a real consumption function. The actuality, however, is extremely different. Formerly the Wicksellian analyzed the price fluctuation process as being caused by the investment-saving gap. Now the Keynesian Revolution elucidated that IS gap will promote a change of output. But *in fact*, the gap generates both fluctuations of prices and production.

Keynes, in Chapter 21 of his *General Theory*, deals with the problem how a change in monetary effective demand will be absorbed between price and output alterations. His analysis in terms of price and output elasticities, $e_0 \cdot e_p$, nevertheless, is not in harmoney with his theory of the multiplier. One of our major problems lies in this harmonization.

One dilemma in the Keynesian economics originates from the above-mentioned inconsistency between monetary multiplier and real consumption function, but his economics also faces another dilemma in the exposition of reality. As a matter of fact, in the United States and other countries, during the inter-war period, there occured an extraordinary severe oscillation of production, and so far as that period is concerned, the real output approach is fairly realistic. But in prewar Japan or in Great Britain in the 19th century, the Juglar cycle of industrial production or real national income, lacks distinctness. Prices are rather more cyclical than production, and very frequently the Juglar cycles of production disappear in its secular upward trend, still more so with reference to the Kondratieff long wave. We cannot find the Kondratieff waves in terms of the index of industrial production or real GNP. Nevertheless, Higgins has even attempted to draw the long waves in terms of GNP in one of his essays.[2] This is quite erroneous and unrealistic. But his is an interesting example of Keynesian adherence to real output fluctuations.

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[1] Cf. J.R. Hicks, *A Contribution to the Theory of the Trade Cycle*, 1950. As Hicks pointed out, the investment function, in addition to the consumption function, must be expressed in real terms, because the *acceleration principle* will be more conveniently developed in real terms than in wage terms. "For what that principle is concerned with is the effect of change in *output* on investment; it is not evident that a rise in output will have any different effect in this direction when it is due to increasing employment from what it will have when it is due to many of the various causes which can be grouped together as increasing productivity" (p. 8).

It is one of the shortcomings of the present Keynesian dynamics that it fails to synthesize price fluctuations with those of output. Of course, we do not attempt to solve the whole problem here. We are merely satisfied to grasp a simple formulation of the inter-relation between multiplier and price changes. This is the task in the next section.

II. *Relation between Income Multiplier and Price Fluctuations*

It has been generally assumed that the theory of multiplier is only valid within the economic sphere of a constant price level, or when the elasticity of production with reference to effective demand is always unity. In other words, it postulates the hypothetical case where the whole increment of effective demand is necessarily absorbed by production increases with the result of no-price-changes. Generally, it is called the theory of under-employment multiplier. In fact, however, prices usually fluctuate even in the stage of under-employment, and in the statistical determination of multiplier, such series as income, consumption, investment, and so on are often deflated by the index of the general price level.

The theoretical assumption of a constant price level is already abandoned when income multiplier is statistically computed, because if the assumption of a constant price level is an indispensable condition, its statistical computation is nonsense.

Although Keynes adopted the wage term, many post-Keynesians use the real term. Consequently we shall henceforward use the multiplier in real terms. When national income is expressed by Y, investment by I, savings by S, general price index by P, price elasticity with reference to money national income by e_p, and output elasticity with reference to Y by e_0 $(=1-e_p)$, we are able to construct the following relation between real income multiplier $k_r\left[=d\left(\frac{Y}{P}\right)\, d\left(\frac{I}{P}\right)\right]$ and money income multiplier $k_m[=dY/dI]$,

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[2] B. Higgins, "Concepts and Criterion of Secular Stagnation," in *Income, Employment and Public Policy*, Essays in Honour of Alvin H. Hansen, 1948, p. 83.

$$k_r=\frac{d\left(\frac{Y}{P}\right)}{d\left(\frac{I}{P}\right)}=\frac{\frac{dY}{P}-Y\frac{dP}{P^2}}{\frac{dI}{P}-I\frac{dP}{P^2}}=\frac{dY-Y\frac{dP}{P}}{dI-I\frac{dP}{P}}=\frac{1-e_p}{\frac{dI}{dY}-\frac{I}{Y}e_p}=\frac{e_0}{\frac{1}{k_m}-\frac{S}{Y}e_p}$$

$$\therefore\quad \frac{k_r}{k_m}=e_0+k_re_p\frac{S}{Y}\ \cdots\cdots\cdots\cdots\cdots\cdots(3)$$

We call this *the fundamental equation of real and money income multiplier.* The meaning of this is as follows: The ratio of real to money income multiplier $\left(\frac{k_r}{k_m}\right)$ largely depends on the value of e_0, i.e., upon the intensity of inflation, for the value of k_r is usually 2–3, S/Y the savings ratio 10–15 %, and e_p in normal times does not rise above 0.5, thus the product of the above three coefficients $k_re_p\frac{S}{Y}$ is 0.1 or thereabout. $\frac{k_r}{k_m}$, therefore, is dominantly determined by the value of e_0.

As a matter of course, $1=e_p+e_0$, because it can be derived by the total differential of the identity $Y=O\cdot P$, (where O is the physical output). Therefore the nearer e_0 is to zero, the closer e_p will be to unity, and the economic conditions will be inflationary. On the contrary, the nearer e_0 is to unity, the closer e_p will be to zero, and k_r will get close to k_m.

Consequently, the severer an inflation becomes, the closer e_0 will be to zero, with the consequence of the difference k_m-k_r growing greater. Formerly, Richard and W.M. Stone computed the marginal propensity to consume and the multiplier with the reference to the six countries, i. e., Germany, Great Britain, Holland, Poland, Sweden and America, but they used not k_r but k_m.[3] Although an international comparison of k_r is meaningful, that of k_m, is nonsense, because even if the computed value of k_r should be equivalent between two countries, k_m in the more inflationary country would be relatively greater than that in the less inflationary country. Colin Clark once compared k_m from time series with k_r from budget studies,[4] utilizing Stone's results. This also lacks economic meaning.

The above is a formal relation between k_r, k_m and e_0, and, in a sense, the bridge between Keynes' multiplier theory and his $e_0\cdot e_p$ theory. If the multiplier theory be constructed on the constant price level hypothesis,

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[3] Richard and W.M. Stone, "The Marginal Propensity to Consume and the Multiplier, A Statistical Investigation," *The Review of Economic Studies*, October 1938.

[4] Colin Clark, *The Conditions of Economic Progress*, 1940, Second edition, Chapter 15.

Keynes' two theoretical apparatus could by no means be harmonized. However, if the multiplier is calculated by the *deflated* income-consumption data, they can be satisfactorily combined, though k_r in this case is not in a position causally to determine real national income relatively to an initially performed investment in money terms.

As the real consumption function is relatively stable, k_r is also stable. As J. Duesenberry pointed out,[5] this may be a *fundamental relation*. On the contrary, the monetary consumption function or money income multiplier is a *derived relation*, because it is difficult to forecast how much prices will change in the forthcoming period, whereas it is comparatively conjecturable how much real consumption will change when a given real income changes. Therefore the money income multiplier as a derived relation depends upon the degree of price fluctuation when the real income multiplier, as a fundamental relation, is once determined.

In the fundamental equation (3), e_0 may be assumed to change in a volatile manner in each phase of business cycle.

If we assume $e_0=1$, and substitute it into (3), we obtain,

$$\frac{k_r}{k_m} = 1 \quad ; \quad k_r = k_m$$

When the price level is perfectly stable, the money income multiplier will concide with the real income multiplier.

But when to the contrary $k_r=k_m$, is e_0 always 1? Surely such will be a special case, but not always, since the relation is not symmetrical or reversible. If we put $k_r=k_m$ into (3), remembering $e_0=1-e_p$, we have

$$1 = \frac{S}{Y}k_r\,; \quad (\text{since } k_r = k_m) \quad 1 = \frac{S}{Y}k_m$$

$$\therefore \quad k_r = k_m = \frac{1}{S/Y}$$

Consequently when there is no intercrept in the two-dimensional diagram composed of S and Y, the condition $K_r=K_m$ will always be satisfied however much the price level changes.

The above, however, is too imaginary case. In fact, not only prices are variable, but also there cannot be supposed any two dimensional diagram without intercept with reference to S and Y. If we compute the values of K_r and K_m from the U.S. Department of Commerce national income data and the BLS consumer's price index 1929–40, we obtain the result $K_r=2.8$ and $K_m=3.5$. This coefficient K_r is not a genuine multiplier, since S and Y are not reduced to a *per capita* basis, but it will probably be adequate as a coefficient indicating the connection with the value $e_0 \cdot e_p$. If we further assume that $S/Y=0.1$ and put these values into (3), e_0 thus derived indirectly becomes 0.72. On the other hand, e_0 in the United States surpasses 0.8 for 6 years and is below 0.8 for 5 years. For these periods, there are several years when S/Y is negative and S/Y actually fluctuated very violently. Therefore, if we put annually changing S/Y into (3), there will be established a clear consistent relation among K_r, K_m, e_0 and S/Y.

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[5] J. Duesenberry, *Income, Saving and the Theory of Consumer Behavior*, 1949, pp. 73–75.

The multiplier under price fluctuations can be formally explained by the above formulation. But in the customary theory of multiplier, the assumption is generally made that before full employment prices do not entirely change ($e_0=1$) and only after full employment, the increase of effective demand will be wholly absorbed by price-rise ($e_p=1$). Goodwin's procedure is one example.[6]

We are interested, then, in deriving the so-called full employment multiplier, i.e., the money income multiplier when $e_p=1$. Substituting $e_p=1$ into (3), we obtain

$$\frac{K_r}{K_m} = K_r\frac{S}{Y} \qquad \therefore \quad K_m = \frac{Y}{S} = \frac{Y/P}{S/P}$$

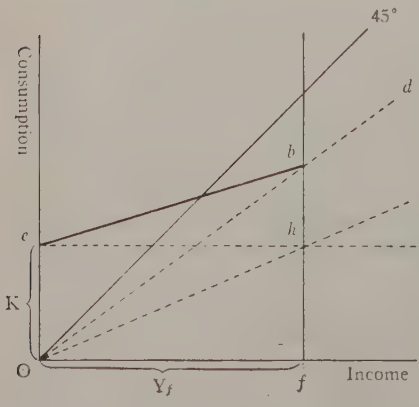
In the form of the propensity to consume,

$$\frac{dC}{dY} = \frac{C}{Y} = \frac{C/P}{Y/P} = \frac{C_f}{Y_f}$$

Where C_f and Y_f is full employment consumption and income respectively, and will be equivalent to C/P and Y/P at and after full employment, if, until full employment, a constant price level is maintained.

If we assume, in Chart 1, that Y_f is the full employment income and real consumption schedule before full employment is *eb*, the monetary consumption function after full employment will be *bd*. This reveals that the ratio between real consumption and real income at the point $f(=C_f/Y_f)$ will remain unchanged, however money income may be nominally swelled.

Chart 1



As generally observed, the marginal propensity to consume after full employment *bd* is greater than that before full employment *eb*, and a slope of *bd* represents not only the marginal but also the average propensity to consume.

Goodwin's full employment

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[6] R.M. Goodwin, "The Theory of Multiplier," in Harris ed. *The New Economics*, 1947, pp. 482–499.

multiplier[7] was formulated as, $\dfrac{1}{1-(\alpha+K/Y_f)}$,
where α is the pre-full-employment marginal propensity to consume and K is the intercrept of the real consumption function eb. Our result perfectly coincides with his formula, because, as the graph distinctly shows,

$$\begin{array}{ccccc} bd & = & \alpha & + & K/Y_f \\ \| & & \| & & \| \\ \dfrac{bhf}{Y_f} & = & \dfrac{bh}{Y_f} & + & \dfrac{hf}{Y_f} \end{array}$$

The above graph indicates the following interesting consequence. The closer the point where the consumption schedule intersects with the 45° line, approaches towards the full employment level f, the wider the distance bf becomes, with the inevitable result that the income-consumption ratio at full employment (ob) as well as the marginal propensity to consume (bd) becomes greater. As the slope bd becomes steeper, K_m after full employment grows greater. And just when the break-even point of income$=$consumption coincides with the full employment level, bd becomes the 45° line itself. This is the case of the marginal propensity to consume$=1$ and the money income multiplier$=$infinity, where the economy is at the verge of instability. Provided that private investment and government expenditures are added to this level of consumption, the inflationary price-wage spiral will necessarily begin. We can easily understand from the above exposition why in the post-war devastated countries where real income has greatly declined, the hyper-inflation was inevitable.

We must now recognize the hitherto postulated assumption that relative prices are invariable over time, i.e., the parallel movement of the price level of investment goods and the general price level. But such an assumption, of course, is unrealistic. In this respect, J.R. Hicks has made the following suggestion. The value of real investment in terms of consumption goods, he says, is the multiplicand, to which the multiplier has to be applied. Thus, without any expansion in real investment in terms of investment goods, there will be an expansion in consumption, due to the multiplier effect, *merely as a result of the price rise*.[8] This is the Hicks method of solution which he proposed as an inspection of ceiling. But the unparallel movement between investment goods prices and consumption goods prices occurs not only in the neighborhood of full employment, but also at the phase of recovery from depression. Consequently, his method contradicts his fundamental procedures of real output dynamics, especially with reference to this exposition of acceleration principle *in physical terms*. However, it is easy to see why he had no other course than choose that way. The essence of real income multiplier probably obliged him to do so.

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[7] Idem, p. 497.

[8] J.R. Hicks, *op. cit.*, p. 130.

As a matter of course, the multiplier is essentially monetary. Therefore the multiplier will lose its proper character if we pursue the truly real relation when relative prices change, but we shall proceed to follow the consequences of the real income multiplier, remembering this limitation.

If we assume the general price level as P_y, the investment goods price level as P_i, then the real income multiplier K_R which takes into consideration these two deflators becomes,

$$K_R = \frac{d\left(\frac{Y}{P_y}\right)}{d\left(\frac{I}{P_i}\right)} = \frac{\left(dY - Y\frac{dP_y}{P_y}\right)P_i}{\left(dI - I\frac{dP_i}{P_i}\right)P_y} = \frac{1-e_p}{\left(1-\frac{dP_i}{P_i}\Big/\frac{dI}{I}\right)} \cdot \frac{P_i}{P_y} \cdot \frac{dY}{dI}$$

If we assume the elasticities of investment goods prices and investment goods output with respect to monetary investment are I_p and I_0 respectively,

$$K_R = \frac{P_i}{P_y} \cdot \frac{e_0}{I_0} K_m \quad \dots\dots\dots\dots\dots\dots\dots\dots (4)$$

P_i and P_y, however, are in terms of index numbers and are 1 respectively at the base point of time. Therefore we can neglect P_i/P_y. Then

$$\frac{K_R}{K_m} = \frac{e_0}{I_0} = \frac{\frac{dY}{Y} - \frac{dP_y}{P_y}}{\frac{dI}{I} - \frac{dP_i}{P_i}} \cdot \frac{\frac{dI}{I}}{\frac{dY}{Y}} \quad \dots\dots\dots\dots\dots\dots (5)$$

It is evident that the ratio K_R/K_m will be determined, if the values of $\frac{dY}{Y}$ and $\frac{dI}{I}$ are given, solely by the relative variations of the two price levels. In this case the relative price will exert a dominant influence upon the gap of K_R and K_m.

Further if we assume $I_0=1$, i.e., that in the investment goods industry, prices are constant, the real income multiplier in this case $K_{\overline{R}}$ will be

$$K_{\overline{R}} = K_m e_0 \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (6)$$

This means that although the initial investment is instantaneously embodied in real capital equipment, $K_{\overline{R}}$ relative to K_m declines owing to the price-rise in other industries. This fact will happen even if the price-rise of investment goods is steeper than that of consumer's goods, since, while the investment will be embodied at every current price level in physical capital goods, the consumers will be in a position to purchase consumer's goods only after the lapse of a further price-rise. Keynes criticized the forced saving theory by his own new theory of multiplier.[9] but his criticism is inadequate because the multiplier process will ordinarily accompany a price-rise and inevitably cause a time lag, thus enforcing upon the masses forced saving to some degree. The ratio $K_{\bar{R}}/K_m$, therefore might be an indicator of the degree of forced saving.

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[9] J.M. Keynes, *General Theory*, pp. 79–81.

The equation (6) $K_{\bar{R}}=K_m e_0$ is valid when a price-rise does not occur in the investment goods industry, as above explained, but it may be used for another purpose, i.e., when we are mainly concerned with the problem of the production effect of monetary investment or monetary government expenditures. Then, by multiplying the money income multiplier by e_0, we can estimate the proportional contribution of monetary investment to the rise of production as compared with the successive increase of money income.

The statistically computed multiplier we frequently come across, however, is not the money income multiplier K_m but the real income multiplier in the form of K_r. The next problem is how to derive $K_{\bar{R}}$ when K_r is known.

By transforming (3)

$$K_m = \frac{K_r}{1-e_p\left(1-K_r\dfrac{S}{Y}\right)} \quad \text{......................} (3')$$

and remembering the equation (6), we derive

$$K_{\bar{R}} = \frac{K_r e_0}{1-e_p\left(1-K_r\dfrac{S}{Y}\right)} \quad \text{......................} (7)$$

From this equation,

if $e_0 = 1 \longrightarrow K_{\bar{R}} = K_r = K_m$

if $e_p = 1 \longrightarrow K_{\bar{R}} = 0$

and, if for example $e_p=0.3$, $\dfrac{S}{Y}=0.1$ and $K_r=2.8 \rightarrow K_{\bar{R}}=2.5$. Consequently the ordinary real income multiplier K_r is greater than *the production multiplier of monetary investment* $K_{\bar{R}}$ which is causally more significant. It is erroneous to think that monetary investment or government expenditures will yield its K_r times real income. By the equation (7), we should consider, instead, that its $K_{\bar{R}}$ times of real income would be generated. In this sense, the Keynesian theory of multiplier, has so far unconsciously given serious illusion to economic students. It is not essential for the *ordinary* multiplier whether the multiplier process is an output expanding process or price-rise process, since the nucleus of the multiplier is substantially monetary.

III. *Keynes' Mistake on the Theory of Price and Output Elasticities*

Our simple attempt at harmonization of the multiplier theory, on the one hand, and the $e_o \cdot e_p$ theory, on the other hand, was developed in section II. We intend, here, to digress from the main description, and to give a close inspection as to Keynes' own theory of price and output elasticities with respect to effective demand.[10] Present-day Keynesians are quite oblivious of Lord Keynes' brilliant Chapter 20, "The Employment Function" and Chapter 21 "The Theory of Prices," as if they were one of the "red herrings" of the General Theory, but it may be necessary to make the trade cycle theory a vivid picture of actuality to utilize those chapters. In this section, however, we confine ourselves within the criticism of Keynes $e_o \cdot e_p$ analysis.

In the preceding section we defined $e_o \cdot e_p$ in money terms, i.e., $e_o = \frac{dO}{O} \cdot \frac{Y}{dY}$ and $e_p = \frac{dP}{P} \cdot \frac{Y}{dY}$, by the total differential of the identity $Y = O \cdot P$. Keynes, however, defines them in wage terms, i.e., $e_o = \frac{dO}{O} \frac{Y_w}{dY_w}$, and $e_p' = \frac{dP_w}{P_w} \cdot \frac{Y_w}{dY_w}$, by the total differential of the identity $Y_w = O \cdot P_w$, where $Y_w = \frac{Y}{w}$ and $P_w = \frac{P}{w}$ and w is the money wage level. Henceforth, we shall use D and D_w in place of Y and Y_w, following Keynes' notations. Consequently, Keynes' first formula is

$$1 = e_o + e_p' \quad \dots\dots\dots\dots\dots\dots (8)$$

$e_o = \frac{dO}{O} \frac{D_w}{dD_w}$ and $e_p' = \frac{dP_w}{P_w} \frac{D_w}{dD_w}$. This means the percentage change of the effective demand in wage terms will be absorbed by the percentage change of prices in wage terms and that of output $\left(\text{i.e., } \frac{dD_w}{D_w} = \frac{dP_w}{P_w} + \frac{dO}{O}\right)$. But the rise of P_w is equal to the decline of real wages $\frac{w}{P}$, and the decline of P_w to the rise of $\frac{w}{P}$. Now if we define $W_p = \frac{w}{P}$,

$$e_p' = -\frac{dW_p}{W_p} \Big/ \frac{dD_w}{D_w} \quad \dots\dots\dots\dots\dots\dots (9)$$

because $\frac{dP_w}{P_w} \Big/ \frac{dD_w}{D_w} = \left(\frac{dP}{P} - \frac{dW}{W}\right) \Big/ \frac{dD_w}{D_w} = -\left(\frac{dW}{W} - \frac{dP}{P}\right) \Big/ \frac{dD_w}{D_w} =$

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[10] I previously tackled this problem, in my book "*Employment and Wages*," (written in Japanese) 1949, but there is another small essays in 1946, which first paid attention to the error in Keynes' $e_0 \cdot e_p$ theory.

$-\frac{dW_p}{W_p}\Big/\frac{dD_w}{D_w}$. e_p' is now transformed into an indicator of real wage variation from that of price flexibility. Therefore, we can see nothing of the theory of prices in the equation (9). It may rather be a formula of decreasing returns in response to the rise of output or employment. It is quite natural that Keynes himself rewrites the notations in (8), before going from Chapter 20 "The Employment Function" to Chapter 21 "The Theory of Prices." But in order to express them in money terms, we may replace the equation (8) by the following equation.

$$1=\frac{dO}{O}\Big/\frac{dD}{D}+\frac{dP}{P}\Big/\frac{dD}{D}\ \ldots\ldots\ldots\ldots\ldots\ldots(10)$$

Strangely enough, Keynes obtains different formula in money terms,

$$1=e_p+e_o(1-e_w)\ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(11)$$

where $e_p=\frac{dP}{P}\Big/\frac{dD}{D}$ and $e_w=\frac{dW}{W}\Big/\frac{dD}{D}$. The equations (10) and (11) clearly contradict. Which is correct? As will be noticed, e_p in this equation is not in money terms. From (11), we derive

$$e_o=\frac{1-e_p}{1-e_w}=\frac{\frac{dD}{D}-\frac{dP}{P}}{\frac{dD}{D}-\frac{dW}{W}}=\frac{dO}{O}\Big/\frac{dD_w}{D_w}$$

e_o is not $\frac{dO}{O}\Big/\frac{dD}{D}$ but $\frac{dO}{O}\Big/\frac{dD_w}{D_w}$ in the notations of Keynes, i.e., in wage terms. Consequently, the equation (11) is expressed in mixed terms. Formally Keynes himself is right, because e_o is the same not only in (8) but also in (11). A few problems, however, remain.

Firstly, in Chapter 21, section 6, he says "The condition $e_w=1$ means that the wage-unit in terms of money rises in the same proportion as the effective demand, since $e_w=\frac{DdW}{WdD}$; and the condition $e_o=0$ means that output no longer shows any response to a further increase in effective demand, since $e_o=\frac{D_dO}{O_dD}$."[11] He clearly recognizes $e_o=\frac{DdO}{OdO}$, i.e., in money terms, if so, the equation (11) is mathematically erroneous. If we take $e_o=\frac{D_wdO}{OdD_w}$, the above verbal explanation becomes incorrect. At any rate he causes an unnecessary confusion.

The *second* problem is substantial, as against the formal dilemma in the first. The problem is why only e_o in (11) must be expressed in wage terms. In fact, e_o in wage terms cannot be compared with e_p or e_w in

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[11] J.M. Keynes, *op. cit.*, p. 304.

peried	1	2
D	100	110
P	100	109
O	100	101
W	100	109
D_w	100	101
P_w	100	100

money terms on an equal footing. For instance, if there occurs a price rise of 9%, a production increase of 1%, and 10% rise in effective demand, and further the parallel movement of wages and prices, then e_o in wage terms becomes 1, while e_o in money terms is 0.1. This is an astonishing difference. When e_o in wage terms $(=1)$ is compared with e_p in money terms $(=0.9)$, we cannot judge whether the economy is inflationary or not.

As already explained, e_o in wage terms$=\frac{1-e_p}{1-e_w}$ or $\frac{\frac{dO}{O}\Big/\frac{dD}{D}}{1-e_w}$. From this we derive a few consequences.

1. If $\frac{dP}{P}=\frac{dW}{W}$, $e_p=e_w$. $\therefore$ e_o in wage terms$=1$, except when $e_p=e_w=1$. Therefore, except in the indeterminate case when the percentage change of production is zero, the parallel movement of prices and wages will always make e_o in wage terms$=1$, however severe the inflation may be.

2. When production is constant, $\frac{dO}{O}\Big/\frac{dD}{D}$ is always zero. Therefore e_o in wage terms is always zero, except when $e_w=1$. In the case when $\frac{dO}{O}=0$, $\frac{dD}{D}=\frac{dP}{P}$, and $\frac{dP}{P}\neq\frac{dW}{W}$ (inflationary case), we have $e_p=1$ and $e_o=0$. But at the critical point when e_w is unity, e_o becomes indeterminate.

3. Mathematically the above formal argument may be possible. But, as an actual problem, the constancy of production and a 0.2% rise of production may be identified. On the other hand, it does not make any difference $\frac{dP}{P}=\frac{dW}{W}$ or $\frac{dP}{P}-\frac{dW}{W}=0.2\%$. e_o in wage terms is thus a very delicate and unstable coefficient which may be unity or zero at random by an operation of raising or dropping fractions. Whereas the economy itself might be in a state of hyper-inflation, whether e_o is zero or unity. It is unrealistic that $\frac{dO}{O}$ becomes completely zero, but it may be more probable that the percentage increase of P and W is close to equivalence in hyper-inflation. Consequently, we shall not go too far in saying that e_o in wage terms is in the neighborhood of unity, since the difference be-

tween $\frac{dP}{P}$ and $\frac{dW}{W}$ may usually be negligible in true inflation, notwithstanding the trivial positive or negative changes of production.

IV. *Some Statistical Analysis*

We shall now stop our theoretical consideration of the relation of real and money income multiplier, but attempt to supplement our article with some statistical, though preliminary, analysis.

Before analysing the Japanese economy, we shall dwell on the American economy. Since the recent Consumption Function Controversy, we have many consumption functions computed in relation to the American economy, but they are usually personal consumption functions with personal disposable income as their major variable. Consequently they are probably as inadequate as those from which we derive a national wide multiplier, because they do not take into consideration "business savings," as a leakage besides personal savings. For this reason, we shall prefer national income to disposable income as a determinant of consumption expenditure thus composing two sorts of consumption functions, one in real terms, the other in money terms. Utilizing the Department of Commerce national income estimates and the BLS consumers' price index, the real consumption function would be (suffix r means real term)

1929–1940 and 1946–47 $C_r=20.5+0.641\ Y_r;\ k_r=2.786$
1941–1943 $C_r=64.7+0.1254\ Y_r;\ k_r=1.143$

On the other hand, in money consumption function, composed of national income and consumption expenditures in current prices, the marginal propensity to consume is 0.714 in the former period ($k_m=3.5$) and 0.333 in the period 1941–44 ($k_m=1.5$)

What are, then, computed values of $e_o \cdot e_p$? We have tried to draw a Chart 2, with NNP on the horizontal axis, and with a price level on the vertical axis, each measured in logarithms, in order to grasp the behavior of e_p graphically.[12] As is easily seen, the slope of the curve shows the elasticity e_p, because it represents $\frac{d \log P}{d \log D}$. The results are as follows. At the end of the First Great War, e_p becomes a relatively high value, showing a very flexible price responsiveness to the monetary effective demand (1920=0.795; 1921=0.735). On the contrary, during the period 1922–1929, the price level was extremely stable, notwithstanding the rise of American production, as if and $e_p \doteqdot 0$ (1923=0.09; 1929=−0.114). Owing to the general increase of capacity output, and the invariable level of employment during this period, the bottlenecks, such as full empleyment and full capacity, did not come into view, which made possible the extraordinary high stability of the price level. Almost zero value of e_p shows not a stage of depression but a phase of high productivity enhanced by successive investments.

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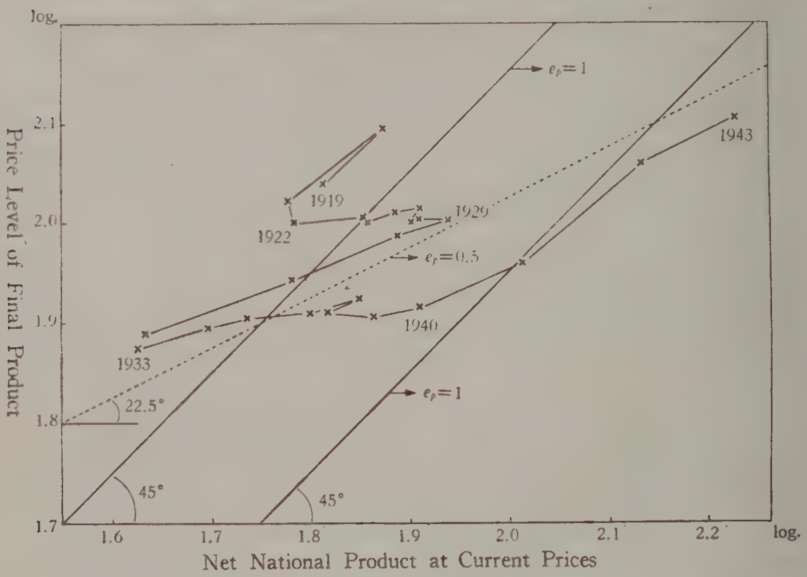
[12] The data is taken from S. Kuznets: *National Products since 1869*, 1946, pp. 55–56. The index of the price-level for final products is derived from a comparison of NNP in current prices with NNP in 1929 prices.

Chart 2. Effective Demand and Price Level in America



Net National Product → from S. Kuznets: *National Product since 1869*

Price-level of final product → $\frac{\text{NNP in current prices}}{\text{NNP in 1929 prices}}$

Next, in the recession from 1929–1933, we obtain $e_p=0.41$, and by a comparison of 1929 and 1932, $c_p=0.37$ is obtained. This exhibits the *asymmetry* of e_p between the prosperity and recession of business cycles. Such asymmetry reappears in the recovery phase of 1933–1940, causing a smoother slope of $e_p(e_p=0.095)$ than in the recession. The reader will find *the Z-shaped behavior of price-effective demand curve* during one business cycle. This asymmetry is different from what Lord Keynes once pointed out. The asymmetry between Inflation and Deflation, pointed out by Keynes,[13] was the fact that whilst a deflation of effective demand below the level required for full employment will diminish employment as well as prices, an inflation of it above this level will merely affect prices. But the fact that such inflation did not occur in 1920's, has made the Z-shape behavior of prices different from what Keynes once expected. After the Second World War, e_p becomes greater, 1941=0.418; 1942=0.879; 1943=0.438. Such regularities of e_p during business cycles will be a first step not only in the synthesis of real and money income multiplier, but also in grasping in an organic manner the whole behavior of prices and output.

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[13] J.M. Keynes, *op. cit.*, p. 291.

We can draw a similar type of graph (Chart 3) also with reference to Japan. It is interesting that we again find the *Z-shape pattern* (*but tilting to the left*). The characteristics of price behavior in Japan lies in the very fact of this tilting. What causes this tilting? First cause is the secular upward trend of the price level since the Meiji era, second is the extraordinary downward flexibility of prices in the period 1920–1931, in spite of the still continuing rapid growth of industrial production during the same period. The fluctuation of e_p is as follows. During the first World War, 1915–1920, e_p=0.868. In the price-fall period, 1925–31. e_p=2.214. (this is an abnormal case when prices and output exhibit an opposite movement). In the recovery phase 1931–33, e_p becomes the very high value 1.238. But in the period 1933–36, e_p=0.344, and in 1937–39 period, e_p=0.433. Only in 1937, e_p=1.309. In the war period, 1939–42, e_p amounted to 1.438. From

Chart 3. Effective Demand and Price Level in Japan

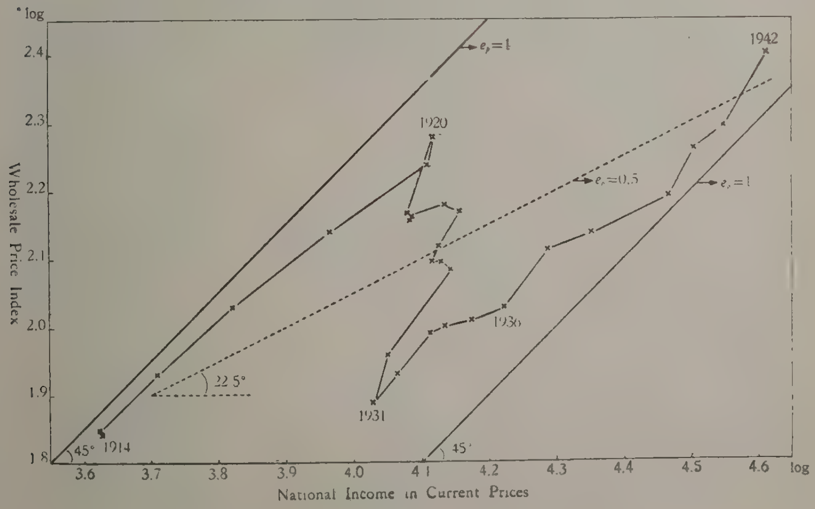
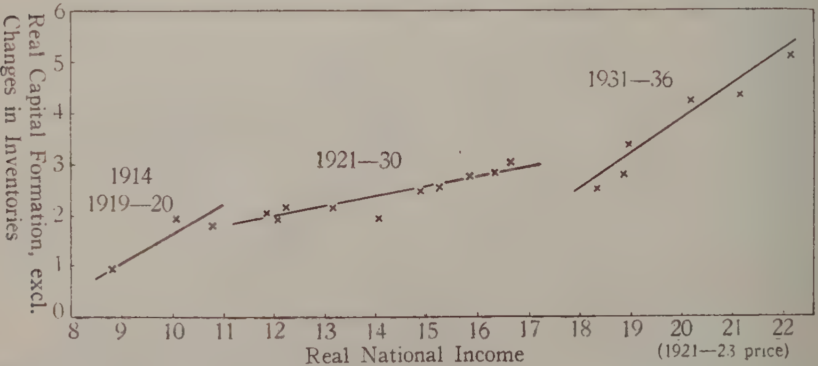


Chart 3, we can see a steeper slope of e_p in Japan, as compared with the American economy. The breadth of the Z-shape pattern is also greater, which shows the greater flexibility of the Japanese price level. These present a striking contrast with the American case (Chart 2). These peculiarities are also the consequence of the almost cycleless rapid tempo of economic growth in Japan (especially with reference to the growth of the manufacturing industry).

Now what is the value of multiplier? To our regret, there has been no reliable estimate of capital formation or consumption expenditures in Japan. Especially the estimate of capital formation by the commodity-flow method has never been undertaken. Recently I have ventured to work with an estimate and obtained some results, (which was published in the "Keizai Kenkyu" (the Economic Review) Vol. 4, No. 1, Jan. 1953, in Japanese, but an English "Digest of Statistical Research," 'Capital Formation of Japan' is attached to it), but my work is confined to an estimate of private and public producers' durable equipment and construction, and excludes inventory-changes. Moreover, we could not estimate capital consumption. Therefore, as a first preliminary approach, we have compared the net national income series with the gross capital formation excl. inventory-changes both in real terms.[14] (We have omitted the graph in money terms, since the stability of the investment-income schedule in money terms is smaller than in real terms). From this we shall not be able to grasp the true value of the multiplier, but its likely behavior during every phase of business cycle will be observable.

Chart 4. National Income and Capital Formation in Japan



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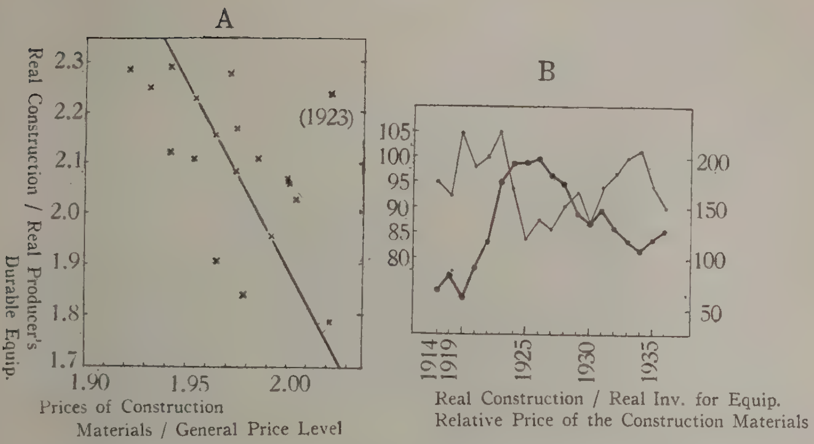
[14] The real national income and capital formation in Chart 4 is obtained by using a common deflator, the wholesale price index. Therefore the graph shows some difference from the graph (Chart 1) in "Keizai Kenkyu" (The Economic Review) Jan. 1935, because in the latter the price index of construction materials is used in deriving the real value of construction.

Chart 5



Our study throws light upon the following interesting relations.

Firstly, when, as in Chart 4, the real capital formation (excluding inventory changes) is compared with the real national income, three sets of investment curve can be fitted, 1914–20; 1921–30; 1931–36. Each curve is a linear straight line and the variance of scattered points is extremely small. In the two periods, 1914–20. and 1931–36, which can be characterized as prosperous price-rise phases, the slopes of investment curves are fairly steep, while during the price-fall period of over 10 years (1921–30), the slope becomes smooth. In other words, in Japan the investment curve (and perhaps the savings function too) alters its slope sensitively in response to the trade cycle. This result appears to correspond contrariwise to the cyclical behavior of labor's relative share in Japan, that is, the latter decreases during a price rise phase and increases during a price-fall phase.

Secondly, a comparison between the real construction/real producer's durable equipment ratio and the relative price index of construction materials is made in Chart 5. In Chart 5, A, there is depicted the negative correlation between them, thus explicitly indicating the strong elasticity of substitution or the large relative price effect upon the relative proportion of the two forms of investments. As a matter of course, public works by the government and reconstruction after the Kanto earthquake disaster in 1923, played a prominent role in promoting the relative weight of construction, but the relative price fall of construction materials exerted a more extensive and permeating influence. In Chart 5, A, one scattered point is 1923. In this year, the Kanto earthquake disaster took place. Chart 5, B, too, exhibits opposite movements of the two forms of investments and their relative prices.

Thirdly, during about 10 years (1920–31), the price level fell by 55%, while on the other hand industrial production rose by 90%. To this puzzling movements the answer may be that during this period the Japanese textile industry achieved a high rate of expansion, which was accelerated by the steep curve of its export. However, during my work upon capital formation, I found another answer, that is, the construction activity during the price-fall period surpassed the decreasing production of equipment, thus leading to the mysterious opposite movement of prices and production. Although I do not know how powerful this effect may be, I believe the discovery of this fact is the most fruitful by-product of our study. Producer's durable equipment, which amounted to ¥ 1,184 milion in 1920 in 1921–24 prices, fell to ¥ 742 million in 1925 in the same const. prices, while real construction increased from ¥ 732 million to ¥ 1,452 million during the same period. The high growth rate of industrial production was not slowed down by this construction activity.

Why the titling Z-shape pattern is embodied in the price level in Japan, is now evident. Although it may be advisable to postpone the analysis of the money and real income multiplier, until an accurate estimate of net capital formation is completed, we may, preliminarily, conclude that even during the price-fall period, expansion of production was still possible not only due to the counteracting rise of construction, and to the extraordinary extension of exports of textile goods, but also due to the rising investment multiplier in the price-fall period.

There is an important limitation with reference to $e_o \cdot e_p$ apparatus, since it assumes that output and price-level are the only functions of effective demand, whereas output is also a function of foreign trade, etc. In Japan the mechanism of prices plays a prominent role in the steady promotion of industry, but a further exposition must be postponed to another article.

INTERRELATIONS BETWEEN "GINME" BAR SILVER, THE MEXICAN SILVER DOLLAR, AND FOREIGN EXCHANGE RATES DURING THE EARLY MEIJI ERA

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I

The monetary system during the Tokugawa period was the treble metallic standard based on gold coins, silver bar and copper coins. The exchange ratio of these metallic moneys was officially fixed by the *Bakufu* (the shogunate government), but the actual ratio was not regulated by an official rate, fluctuating with demand, due to the lack of free-coinage. The unit was one *ryo* which was worth four *bu*, one *bu* being the equivalent of four *shu*; and *ryo*, *bu* and *shu* could be represented by gold coins, silver bar and copper coins. Under the Keicho (1596-1614) currency system, one *ryo* was represented by *kobang* (gold coin) containing 4.73 *monme* of gold, and also by 50 *monme* and shortly after 60 *monme* of silver or 4 *kwan* of copper. (1 grain=0.064 grammes, 1 monme=3.75 grammes) During the Genroku era (1688-1703), as a result of recoinage, the weight of gold in *kobang* was reduced by half, and the weight of silver per *ryo* (*ginme*) remained unchanged as official parity for a long time, notwithstanding the successive debased recoinage of gold and silver coins. However, the actual rate was regulated principally by the demand of gold and silver in business transactions. It was the custom to use a different currency according to the transaction of commodities,[1] and there was a rough distinction between *kin-zukai* (gold-medium economy) in Yedo and the *gin-zukai* (silver-medium economy) in Osaka. This brought about a change in the demand for currency.

In this way, silver circulated a long while as a currency by weight at the parity of 60 *monme* per one gold *ryo*. This official rate of *ginme* was generally maintained in business transactions, but among money changers silver was transacted by quotations, bringing about fluctuations of the rate of *ginme*. The rate of *ginme* fluctuated principally with the supply and demand of gold and silver but was not affected by changes in the substantial value of *kobang* caused by successive recoinage. The fineness of gold and silver currencies was kept in the greatest secrecy, but money changers knew the technique of finding it out. There was, however, no fluctuation in the rate of *ginme* caused by fineness, fluctuations being principally brought about by the demand for gold and silver.

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[1] Takatsugu Mitsui, A New Chronological History of Money Exchange, Vol. II, Historical Inquiry, p. 104.

Silver was transacted by weight for a long period, but in the Meiwa era (1764-1771), a silver coin containing 5 *monme* of silver was minted, and 12 pieces of this coin were exchanged with one gold *ryo*. This silver coin had a fixed content and weight, 12 pieces containing 60 *monme* of silver. Fluctuations in the rate of *ginme* disturbed the circulation of this five *monme* silver coin as a money of fixed content, resulting in the failure of this coinage.[2] It was natural that even under a feudalistic currency system, the compulsory fixing of 12 pieces of five *monme* silver coin as 60 *monme* of *ginme* was impossible, because the rate of *ginme* fluctuated between 62 *monme* and 68 *monme* at that time. Consequently, the minting of 5 *monme* silver coins was suspended in the beginning of Anwei (1772).

Following the suspension of the coinage of the 5 *monme* silver coins, a new silver coin of two *shu* named *nanryo* was minted in the same year; this coin had a content of superior silver and was regarded as of the grade of a gold coin. The content of this Anwei *nanryo* silver coin was 2.7 *monme* of superior silver, and the coin was money of fixed content, 8 pieces of *nanryo* to be exchanged for one *ryo* of *kobang*, the determination of money by weight thus completely disappeared.[3] The content of this silver coin was superior silver, but the total weight of 8 pieces was only 21.6 *monme*, while 8 pieces could be exchanged for one gold *ryo*. From this viewpoint, the currency can be said to have become bimetallic, gold and silver, not accompanied by a free coinage system, when copper is excluded from consideration. However, as there still existed silver as money by weight, the *nanryo* silver coin can be regarded as a modern subsidiary currency. Consequently, silver circulated either as money of fixed content or as money by weight. Later, silver coins as money of fixed content increased due to the mintage of one *bu* silver coin etc. On the other hand, transactions in silver as money by weight also continued to exist, resulting in the fluctuation of the rate of *ginme*.

The fluctuations of the rate of *ginme* and the exchange ratio of gold and silver through a comparison of *kobang* and *chōgin* (the silver bar) for each recoinage period are shown in the following table.[4]

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[2] Naokata Kusama, A Graphical Cyclopeadi a of the Three Currencies, Vol. 19; T. Mitaui, *ibid.*, p. 179.

[3] T. Mitsui, ibid., p. 180.

[4] Koga, A Table of Coins of the Tokugawa Period; Shigeru Yamaguchi, Oriental characteristics in the Currency System, Annual Report of the Southeast Asia Economic Research Institute of the Tokyo Commercial University, pp. 544, 545.

	Rate of Gold and Silver	Rate of *Ginme*	
		Legal weight	Actual rate (*monme*)
Keichō (1596–1614)	1 : 12.38	50	61.79
Genroku (1688–1703)	1 : 22.78	60	56.77
Hōei (1704–1710)	1 : 22.88	〃	58.55
〃	1 : 30.42		
Shōtoku (1711–1715)	1 : 15.43	〃	72.49
Gembun (1736–1740)	1 : 26.82	〃	61.57
Bunsei (1818–1829)	1 : 31.70	〃	63.12
Tempō (1830–1843)	1 : 39.04	〃	63.58
Ansei (1854–1859)	1 : 46.35	〃	69.76
Manyen (1860)	1 : 14.257	〃	82.38
Meiji 4 (1871)	1 : 16	〃	

The rate of *ginme* fluctuated principally with demand in transaction, with no relation to the substantial value. The ratio of gold and silver after the Manyen era was affected by the world currency system.

A comparison of silver coins of fixed content and one *ryo* of *kobang* is as follows:

Meiwa 9 (1772)	Meiwa *nanryo*	1 : 7.988
Bunsei 7 (1824)	Bunsei *nanryo*	1 : 4.798
Bunsei 12 (1829)	Old 1 *shu* silver	1 : 7.513
Tempo 3 (1832)	Old 1 *bu* silver	1 : 4.669
Ansei 6 (1859)	New 2 *shu* silver	1 : 17.204
	New 1 *bu* silver	1 : 5.132
Meiji 1 (1868)	New deteriorated 1 *bu* silver	1 : 13.866

As regards the ratio of gold and silver in comparison with *chōgin* and *ryo* of *kobang*, silver was greatly undervalued, whilst the ratio of the fixed content silver coin to *kobang* indicated a higher valuation of silver. *Chōgin* was a standard silver currency, whilst fixed content silver coins such as *nanryo* were subsidiary. However, *nanryo* coins were used in the same way as gold *kobang* due to its content of superior silver, *nanryo* coins may be regarded as paralleling a standard. Further, from the fact that the ratio of exchange between foreign silver and one *bu* silver coins became a problem, the fixed content silver coins may be said to have been a kind of standard currency. The rate of *ginme* continued to fluctuate with the conditions of demand in transtactions, with no relation to the above. The rate was the substantial exchange ratio based on the market ratio of exchange between gold and silver, but following the increase in the issue of fixed content silver coins, *ginme* gradually became a yardstick for measuring money.

The rate of foreign silver, as mentioned in the following section, was expressed by *ginme*, indicating one dollar of foreign silver in terms of silver weight in Japanese currency; the rate of *ginme* did not indicate the exchange ratio between foreign silver and *Chōgin*. Thus, *ginme* gradually became nominal and its nature as a yardstick became apparent.

II

While the currency system in the Yedo period experienced the above mentioned change, foreign silver currency was introduced in Japan. During the period of national isolation, foreign trade was carried on with Holland at Dejima near Nagasaki on a limited scale. Following the arrival of American ships in Kaei 6 (1853), Japan was gradually compelled to open the country to foreign commerce, and a treaty of amity was concluded between Japan and the United States by the Shimoda treaty (signed by Commodore Perry and Hayashi-Daigaku-no-Kami) in December of Ansei 1 (1854).[5] By this treaty, Japan was to supply fuel, food, etc. against payment in gold, silver and copper currencies, as well as goods. In January of Ansei 5 (1858), a commercial treaty was concluded between Japan and the United States,[6] involving a "clause of same kind same quantity concerning money". Article 5 of this treaty stipulated that "foreign currency may circulate in Japan in weight and kind as the Japanese currency; both Japanese and foreign currencies may be used for payment by both nationals; as the Japanese were not accustomed to the value of foreign currency, governmental authorities at each port shall exchange mexican dollar against one *bu* silver coin during a year after the opening of ports." By this provision, foreign currencies were authorized to circulate in Japan under the same kind same quantity principle, and the *Bakufu* was bound to exchange Japanese and foreign currencies under the said principle.

Foreign currencies were Mexican silver containing 416 grains (about 7. 2 *monme*) of silver and other foreign silver currencies;[7] the Jananese currency was the old one *bu* silver coin of Tempō 8 (1837), which was a fixed content silver coin containing 2.3 *monme* of silver. The exchange ratio was that one dollar of Mexican silver was worth one piece of one *bu* silver coin, from the principle of same kindsame quantity.[8] The reason for this unreasonable ratio may be a misunderstanding in the valuation of Dutch currency in terms of *ginme* and weight of silver as per stipulation of Article 12 of the supplement of the Nagasaki treaty of Ansei 2 (1855), providing that one guilder of gold, silver and copper shall be exchanged with 6.25 *monme* of Japanese silver.[9]

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[5] Awa Katsu, History of the Opening of Japan, Vol. II. P. 1087.

[6] Awa Katsu, *Ibid*., p. 1085.

[7] Administrative Ordinance of April 14, Meiji 1 (1868) (Classified Collection of Regulations, Part 1, Government System, Miscellaneous System 4, Money 2, p. 162).

[8] Awa Katsu, *ibid*., p. 1156.

[9] Mitsuo Hara, Foreign Trade at the Time of the Opening of Yokohama, and the History of Mexican Silver Rate, p. 2

The exchange ratio of one Mexican silver with one *bu* silver coin was later revised through the protest of American officials to one Mexican silver against three *bu* silver coins. The content of one dollar Mexican silver was 7.12 *monme* of silver as against 6.9 *monme* of silver for three *bu* silver coins, the difference was approved as a mint fee following the same kind same quantity principle clause in the Japan-U. S. commercial treaty of Ansei 5 and the tariff revision agreement of Keio 2 (1866). However, the exchange ratio for the collection of customs duties was 100 pieces of Mexican silver per 311 pieces of one *bu* silver coins, on the basis of the analysis table of Harris.[10]

$$\begin{aligned} &7.153 \ monme \times 100 = 715.3 \ monme \\ &2.3 \ \ \ \ \ monme \times 311 = 715.3 \ monme \end{aligned}$$

So 100 pieces of Mexican silver = 311 pieces of one *bu* silver coins. There was no reason to consider a remint fee in the collection of customs duties. However, the problem of the fee existed in other cases, though the ratio showed some changes.

As above stated, under the currency system in Yedo period, the value of Mexican silver was calculated in terms of one *bu* silver coins, and the exchange ratio was officially fixed. The ratio of three one *bu* silver coins per one piece of Mexican silver was based on the same kind same quantity principle; when calculated in terms of *ginme*, the value of one Mexican silver was worth 45 *monme* of silver (60 $monme \times \frac{3}{4}$). This was the exchange ratio or foreign exchange rate based on the substantial value of the Japanese and foreign currencies, and may be regarded as the legal or mint ratio. The value of Mexican silver began to be expressed in terms of *ginme* which became a money of account, one *ryo* of gold was expressed by 60 *monme* in terms of *ginme*, and the exchange ratio of Mexican silver was expressed by *ginme*.

Thus, the exchange ratio between Mexican silver and one *bu* silver coin was at first based on the content of silver and had no meaning as a foreign exchange rate. Since the Bunkyu era (1861-1863), with the activity in private foreign trade and the commencement of transactions in Mexican silver, Mexican silver has become a foreign trade currency. As a result, the exchange ratio of Mexican silver began to fluctuate with the changes in demand disregard of the exchange ratio of the same kind same quantity principle.

The same kind same quantity principle could not guarantee the exchange ratio of Mexican silver which became a foreign trade currency. Mexican silver circulated in various countries of the Pacific coasts, functioning as actual silver exchange; they have appeared in Japan as the foreign trade currency since the Bunkyu era. The exchange ratio of three one *bu* silver coins per one Mexican silver based on weight was affected by the demand and supply relations. The exchange ratio of Mexican silver in terms of *ginme* has been about 36 *monme* since the opening of the Port of Yokohama. According to a report on the average exchange rate of Mexican silver made by Mr. Sōbei Mogi in May of Meiji 8 (1876), it showed a decline below the official rate as mentioned in the following table. This exchange ratio may be that in Yokohama.

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[10] Marquis Okuma, His Life for 85 Years, Vol. 1, p. 180.

			Monthly average (*monme*)	
			High	Low
Bunkyu	2	(1862)	35.87	31.82
	3	(1863)	36.47	34.49
Genji	1	(1864)	39.4	32.61
Keiō	1	(1865)	36.93	34.63
	2	(1866)	46.57	39.5
	3	(1867)	50.4	45.19

The decline in the exchange rate of Mexican silver below the substantial value was attributed to an excess of exports over imports at Yokohama at that time.[11] Figures of foreign trade of Yokohama from Ansei 6 (1859) are shown in the following table.[12]

			Exports	Imports
Ansei	6	(1859)	587,908 yen	543,005 yen
Manyen	1	(1860)	3,194,688	2,996,568
Bunkyu	1	(1861)	2,343,755	2,189,506
	2	(1862)	4,113,755	3,858,016
	3	(1863)	3,704,484	3,474,749
Genji	1	(1864)	3,601,284	3,377,949
Keiō	1	(1865)	5,318,767	4,988,921
	2	(1866)	6,794,439	6,373,079
	3	(1867)	6,764,749	6,345,229
Meiji	1	(1868)	13,307,201	7,684,032

Thus, owing to the continued excess of exports at Yokohama the supply of Mexican silver increased, resulting in a decline in the exchange rate. Mexican silver was exchanged with nearly 45 *monme* of *ginme* during the period when foreign trade was small and the value of Mexican silver as a foreign trade currency was low, but with the advance in foreign trade and increased transactions in Mexican silver, the exchange rate in terms of *ginme* began to fluctuate and decline as result of an excess of exports.

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[11] Yokohama Chamber of Commerce, Fifty Years of Yokohama and Port, 2nd. Vol. p. 437.

[12] *ibid.*, p. 463

III

As stated above, the rate of *ginme* was the exchange ratio between gold and silver. However, following the appearance of fixed content silver coins, the rate became nominal, and, in particular, the exchange of Mexican silver in terms of *ginme* did not reflect the ratio with *chōgin*, in this case, the exchange rate between Mexican silver as a foreign trade currency and one *bu* silver coins was expressed by *ginme* which indicated only that one *ryo* of gold was worth 60 *monme* of silver. This exchange rate of Mxican silver became the actual silver foreign exchange which fluctuated with demand in foreign trade transactions, apart from the substantial value.

Thus, Mexican silver coins acted as actual silver exchange towards the end of the Tokugawa period, but in a different way from a real monetary system accompanied by free-coinage. In modern foreign exchange systems, international accounts are settled by foreign exchange bills, and foreign exchange rates fluctuates with the demand of such bills. When fluctuations exceed a certain limit, international accounts are settled by the shipment of gold or silver, therefore fluctuations are limited by the specie points.

To make the difference clear, for instance, A in Yokohama exported 1,000 dollars worth of raw silk to B in New York, and D in Yokohama imported 1,000 dollars of raw cotton from C in New York. B must pay 1,000 dollars to A, and D must pay 1,000 dollars to C. In this case, payment and collection will be carried on through foreign exchange bills which will offset payment and collection; A will draw an exchange bill upon B and sell it to D so as to collect the payment for raw silk; D will send the exchange bill drawn by A upon B to C for the payment of raw cotton prices; C receives the payment for raw cotton by B through the exchange bill drawn by A upon B received from D; B can settle the debt owed to A through the payment of the amount of exchange bill drawn by A upon B to C.

The foreign exchange bill is a means to offset payment through credit transactions, any remaining balance is settled by the remittance of gold. This explains the settlement through foreign exchange bills among traders, but in reality, it is difficult to meet payments with receipts. Thus, with the necessity of foreign exchange banks between A and D or exporters and importers, A will sell an export bill to a foreign exchange bank and receive yen equivalent to 1,000 dollars, the amount of the bill. In this way, A can collect the value of exported silk promptly.

D will receive from a foreign exchange bank a dollar bill drawn by the bank and payable to C, in return for the payment of yen equivalent to

1,000 dollars, the value of raw cotton, and send it to C; the foreign exchange bank sends the dollar bill purchased from A to its branch in the United States to collect the amount from B and pay to C.

In this way, the transaction is completely settled. However, in reality, the export bill drawn by A is not sold to D; the foreign exchange bank will purchase dollar export bills, and will draw a different dollar bill and sell it to D. Thus, the foreign exchange bank acts as a reservoir for the purchase and sale of foreign currency bills.

International accounts are also settled through foreign exchange bills. When exports or other accounts receivable are large, the sale of foreign exchange bills to banks becomes active, bringing about an increase in the supply of foreign currency in the market. On the contrary, when imports or the accounts payable are large, the demand for foreign currency in the market is increased. When the supply of foreign currency bills exceeds the demand, quotations of foreign exchange bills will show a decline; when the demand for foreign currency bills exceeds the supply, quotations will advance. The rise and fall in quotations of foreign exchange bills shows the ratio of foreign to domestic currency. An increase in the demand for foreign currency means an increase in the supply of domestic currency; an increase in the supply of foreign currency means an increase in the demand for domestic currency. Such rise and fall in the quotations of foreign exchange bills causes fluctuations in the exchange rate of foreign and domestic currencies, that of the value of foreign currency in terms of domestic currency and that of the value of domestic currency in terms of foreign currency.

Thus, foreign exchange rate fluctuate with the supply and demand relation between foreign and domestic currencies; when accounts receivable are large due to excess exports or other reasons, the exchange rate shows a rise, whilst when accounts payable are large due to excess imports or other reasons, the exchange rate falls. Therefore, when the payment account between two countries is one-sided, the forein exchange rate will rise fall without limit.

However, with the international gold or silver standard, settlement can be realized through the remittance of gold or silver. Therefore, if fluctuations of exchange rates are sharp, international payments will be settled by the remittance of gold or silver, which will check the fluctuation of exchange rates. Between gold standard countries, settlement is made through the remittance of gold on the basis of the mint par of gold of two currencies calculated from the content of gold—for instance 100 old Japanse yen were worth 50 U. S. dollars—, deducting or adding transportation charges; therefore, fluctuations of the exchange rate are limited to the specie point. Accordingly, even if the exchange rate fluctuates by the demand and supply relations in the market, the fluctuations of the exchange rate are limited to the specie point with the transportation of specie, in case the fluctuations of the exchange rate are beyond the limit o the specie point.

The modern foreign exchange system based on the principles of profit-making is regulated by the mint par value of gold—the transportation charges of gold—the supply and demand of foreign exchange bills.

IV

The actual silver exchange through the Mexican silver was different from the modern way. In modern foreign exchange practice, the movement of exchange rate appears as fluctuation in the value of foreign exchange bills. The value of foreign exchange bills rises or falls indefinitely following the supply and demand. However, this rise and fall in the exchange rate is restricted by the mint par value of gold or silver deducting or adding the transportation charges. Thus, there are two kinds of fluctuations in foreign exchange; the one is due to relative value which moves with the supply and demand situation of foreign and domestic currencies; the other is due to the substantial value, which regulates the former fluctuation and stabilizes it.[13] The substantial value is fixed directly by the content of gold or silver, and indirectly by the purchasing power parity. The gold parity and the purchasing power parity will coincide in equilibrium, but the gold standard by means of the gold parity regulates the foreign exchange rate as regard substantial value. The fluctuations of modern foreign exchange rate in the field of relative value is regulated by transactions in foreign exchange bills, and the fluctuation in substantial value by the content of currency; exchange bills and specie act separately in the function, constituting the foreign exchange organization.

The rate for Mexican silver as a foreign exchange rate did not separate the fluctuations due to relative and substantial value, because it was an actual silver exchange, the two being involved in Mexican silver itself. The rate for Mexican silver, according to which one Mexican silver coin was worth three pieces of one *bu* silver coin or 45 *monme* of *ginme* was a standard based on substantial value, but the rate declined to about 36 *monme*, disregarding the exchange ratio based on the content and indicating fluctuation due to the relative value ; despite the substantial value of 45 *monme* of *ginme*, the value of Mexican silver declined owing to demand and supply conditions. The fall in the rate of Mexican silver coins was, as already mentioned, a consequence of their increase in supply as a result of excess exports.[14]

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[13] Shigeru Yamaguchi, General Theory of Finance.

[14] Yokohama Chamber of Commerce, *ibid.*, 2nd Vol. p. 453.

How was it possible that the substantial value of Mexican silver was 45 *monme* of *ginme*, whilst its value as a foreign trade currency was 36 *monme*? At that time, one *bu* silver coins were not in free coinage, and Mexican silver also were not freely coined in Yokohama. The exchange of Mexican silver coins into one *bu* silver coins was not smooth owing to the failure of the government to mint one *bu* silver coins; therefore, Mexican silver coins bearing the Japanese term "revised to three pieces of one *bu* silver coin" were used as a substitute.[15] The currency system at that time was far from the commercialism of today; there prevailed feudalistic economy. However, there must have been various fields permeated by commercialism though free economy did not prevail, as foreign firms and banks were established in concessions and Japanese trading firms keenly interested in profit making were engaged in buying and selling.

As commercialism prevailed to some extent, why was the value of 45 *monme* not realized for one dollar of Mexican silver? It may be presumed that no one exchanged Mexican silver at the standard value when the actual rate was 36 *monme*. It is to be supposed that profits from foreign trading were sufficient to cover the loss of 9 *monme* resulting from the depreciated rate, and that the utilization of Mexican silver in foreign trade was more profitable than payment at the substantial value on account of the large profits in foreign trade at that time. This can be proved by examples.

A Merchant in Yokohama sells goods purchased in the country with three pieces of one *bu* silver to a foreign trading firm in the concession. If the foreign firm can export it at 3 dollars, the exchange rate on a commercial basis will be three pieces of one *bu* silver per 3 dollars of Mexican silver or 15 *monme* per one dollar; thus the rate of Mexican silver can decline to the level of 15 *monme* of *ginme*. As the foreign trade of Yokohama registered an excess of exports during the period from the Bunkyu to Keio era (1861-1867), Mexican silver was in over-supply as against one *bu* silver coins. Although the rate of Mexican silver declined to 35 *monme*, registering a loss of 10 *monme* compared with the substantial value, the export at this low rate of Mexican silver still realized a profit of 20 *monme* even without a adherence to the substantial value of 45 *monme*. It is proper to consider that the decline in the rate of Mexican silver was caused by deviation of the exchange rate from the substantial value due to the above relation and that this decline governed the exchange rate to one *bu* silver coin. Consequently, when the difference between the lower rate of Mexican silver and the rate on a commercial basis became smaller than between the substantial value and the lower rate of Mexican silver there was greater possibility that the rate of Mexican silver as a foreign trade currency could be governed by the exchange rate at the substantial value.

The following was the relation between the rate of the Mexican silver as foreign exchange, and its substantial value and the rate on a commercial basis.

	Substantial value of Mexican silver	45 *monme*
(1)	Rate of Mexican silver	35 *monme*
	Rate of Mexican silver on a commercial basis	15 *monme*

When a commodity purchased at three pieces of one *bu* silver coins is exported to the United States at 3 dollars, the rate on a commercial basis of Mexican silver is one piece of one *bu* silver coin or 15 *monme* per dollar.

The transaction of Mexican silver at the foreign exchange rate entailed a loss of 10 *monme* as compared with the substantial value. As the transaction registers a profit of 20 *monme* compared with the rate on a commercial basis, the balance between the profit of 20 *monme* and the loss of 10 *monme* is a profit of 10 *monme*.

	Substantial value of Mexican silver	45 *monme*
(2)	Rate of Mexican silver	40 *monme*
	Rate of Mexican silver on commercial basis	35 *monme*

Transactions at the rate of Mexican silver registered a loss of 5 *monme* compared with the substantial value; 45 *monme*—40 *monme*=5*monme*. The transaction registers a profit of 5 *monme* compared with rate on a commercial basis ; 40 *monme*—35 *monme*=5 *monme*. As the profit and loss is the same, the value of Mexican silver remains the same as the substantial value; therefore, in this case, Mexican silver will be re-minted or utilized as foreign trade currency.

The substantial value, the rate of Mexican silver and the rate on a commercial basis are equalized, and are going to approach to the condition of equilibrium in a free economy.

Thus, the function of Mexican silver as an exchange rate had a different form compared with modern foreign exchange conditions, but in substance, its function was the same as in modern foreign exchange. The rate of foreign exchange bills in the modern foreign exchange system under the gold standard is identical with the rate on a commercial basis. The rate of exchange bills is based on a commercial basis. The rate of Mexican silver and the rate on a commerical basis were combined into the foreign exchange rate, constituting a foreign exhange organization which secured stability through limitation by the specie point (the substantial value of Mexican silver). In the modern free-circulation economy, in order to attain equilibrium the substantial value, exchange rate and the rate on commercial basis are approaching each other, and fluctuations of the exchange rate are limited within the specie points.

The difference between the rate of Mexican silver as a foreign exchange rate and modern foreign exchange consists in the fact that the latter is an economy in equilibrium, whilst the former involves extreme unbalance due to the lack of a free economy.

V

The abolition of *ginme* transaction was ordered by the Administrative Ordinance of May 5th 1868 (Meiji 1), and *ginme* which had become already merely nominal continued to be used as a yardstick for measuring money. Quotations of Mexican silver expressed in terms of the *ginme* in the earlier years of Meiji were as follows, according to figures quoted by Mr. Sōbei Mogi and Mr. Ukichi Taguchi:[16]

Quotations of Mexican Silver after the Restoration
(in terms of 60 *monme* by *ginme*)

year	highest	lowest	year	highest	lowest
1868	51.40	36.09	1874	62.71	61.77
1869	66.24	53.03	1875	62.19	
1870	63.41	60.00	1876	60.00	
1871	60.67	53.39	1877	60.92	
1872	63.70	58.62	1878	62.83	
1873	63.84	60.99	1879	March 75.54	

It should be noted that the principle of equality between *ryo* and *yen* was established by the New Currency Regulation of 1871 (Meiji 4), and the exchange rate of *ginme* was amended from 45 *monme* to 60 *monme*, that is:

Old : — 1$ Mexican silver=3 pieces of one-*bu*-gin=$\frac{3}{4}$ *ryo*=45 *monme* by *ginme*.

New:—1$ Mexican silver=one yen silver coin=one yen gold coin=one gold *ryo*=60 *monme* by *ginme*.

Meanwhile, the Mexican silver had undergone a change in character, the quotations which had retained meaning as an exchange rate up to about 1867, now in the light of foreign trade at the Yokohama port acquiring a new relationship.[17]

Foreign Trade at Yokohama after the Restoration
(in yen)

year	Exports	Imports	year	Fxports	Imports
1868	13,307,201	7,684,032	1875	12,970,987	22,539,784
1869	10,384,060	15,774,732	1876	21,814,921	18,920,824
1870	10,770,381	24,794,474	1877	15,916,368	21,028,788
1871	12,074,628	13,883,552	1878	15,540,291	24,870,241
1872	11,729,835	19,024,050	1879	19,258,733	23,606,570
1873	15,694,060	19,742,563	1880	18,984,217	26,324,650
1874	13,034,243	16,748,401	1881	21,481,187	21,584,318

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[16] Ukichi Taguchi, The Anti-Mexican Silver Problem, Dec. 1878.

[17] Fifty Years of the Yokohama Port, edited by the Yokohama Chamber of Commerce, 2nd. Vol., p. 463.

In the earlier years of Meiji, foreign trade at Yokohama showed a considerable adverse balance due to overwhelming importation of Western goods, but with the exception of 1868 and 1876 there was a large favourable balance mainly on account of the increased exportation of raw silkworm egg cards based on special circumstances.[18]

A comparison of Mexican silver quotaions with exports and imports at Yokohama during the period from the Restoration to the year of the New Currency Regulation, will show some correspondence. Silver quotations were lowest (36.09 *monme*) in the starting year of Meiji (1868) when exports recorded a large excess over imports, but for the remaining years remained in the neighborhood of 60 *monme* against 45 *monme* of standard weight, while trade turned adverse by far more than to offset the export excess during the period from Bunkyu to Keiō (1861-1866). This appreciation of Mexican silver was attributable to the excess of imports over exports. Thereafter, however, fluctuations remained within the small range around the level of 60 *monme* in spite of the continued adverse trade balance up to 1879.

This would imply that Mexican silver quotations were by degrees subject to some modification. This tendency as shown at Yokohama cannot always be applied to Hakodate, Hyōgo, Nagasaki and other ports, among which there was little inter-relation at that time. The conditions at other ports, however, might be supposed not to be quite different from this tendency which could be observed also in the foreign trade figures of the whole country.[19]

Exports and Imports of the Whole Country
after the Restoration (in 1,000 yen)

year	Exports	Imports	Difference	Year	Exports	Imports	Difference
1868	15,553	10,693	4,860	1875	18,611	29,976	–11,365
1869	12,909	20,784	–7,875	1876	27,712	23,965	3,747
1870	14,543	33,742	–19,199	1877	23,349	27,421	–4,072
1871	17,969	21,917	–3,948	1878	25,988	32,875	–6,887
1872	17,027	26,175	–9,148	1879	28,176	32,953	–4,777
1873	21,635	88,107	–6,472	1880	28,395	36,627	–8,231
1874	19,317	23,462	–4,145	1881	31,059	31,191	– 132

So I cannot help thinking that the adverse balance after 1871 did not give rise to a rise in Mexican silver quotations which accordingly diminished in significance as a foreign exchange rate.

Foreign firms and bankers who had entered Japan since the opening of ports engaged in foreign trade on spot exchange account with Mexican silver, and the transactions between them would be cleared by the modern transfer of foreign bills. The figures on foreign exchange rates inserted in the "Statistical Yearbook of the Japanese Empire" for certain period after 1874 were those transacted among foreign firms and bankers. However, spot exchange dealings in Mexican silver had decreased by degrees in importance, and not later than 1877 the rise in Mexican silver did not always reflect the adverse balance. If most of the foreign trade had been subjected to exchange dealings in Mexican silver, quotations should have more advanced. But the level before that year showed only a little higher rate than 60 *monme*, its parity. It must be presumed that quotations of Mexican silver gradually lost importance as a foreign exchange rate.

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[18] *ditto, p.* 473.

[19] General View of the State of the Japanese Empire for the Period of Meiji and Taisho, edited bp the Oriental Econnomist, p. 445.

VI

Since the appearance of the one yen silver coins (trade silver coins) equivalent in weight to Mexican silver, authorized by the New Currency Regulation of 1871, the quotation of the latter used to indicate a market exchange rate of inconvertible notes issued after the Restoration, to one-yen silver coins and Mexican silver.

The enormous outflow of coins before the restoration was chiefly due to the difference between the parity of gold and silver in Japan and that in foreign countries, but after the Restoration the depreciation of paper money through successive issues of various government and bank notes in addition to the excess of imports during several years also gave rise to an outflow of gold and silver. New gold and one yen silver coins were introduced by the above Regulation,[20] and gold coins in circulation diminished from 43, 551,000 yen at the end of 1873 to 11,998,000 yen at the end of 1884 owing to the outflow of gold coins in spite of new coinage. On the other hand, silver coins in circulation increased in consequence of the greater issue of one yen silver coins, so that the de facto silver standard since the beginning of 1886 could be placed on a firm basis.

Besides metallic money, inconvertible notes appeared one after another. After the issue of government notes, called *Dajōkan-satsu*, by Administrative Ordinance of April 19th. 1868,[21] devised as one of the measures to meet financial difficulties, Ministry of Civil Affairs notes(*Minbusho-satsu*),[22] Land Reclamation Authority notes[23] and Exchequer Convertible Notes followed in succession. Meanwhile, several bank notes issued by The Kawase Kaisha Banks appeared since 1869, followed by national bank notes issued by national banks established on the basis of the National Bank Regulation of 1872, though the latter turned into inconvertible notes by the revision of that Regulation. Thus, inconvertible notes in circulation amounted to the following;

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[20] General View of the State of the Japanese Emp're, p. 132.

[21] Administave Ordinance, April 19th 1858.

[22] *ditto*, Sept. 17th 1869.

[23] *ditto*, Oct. 12th 1871.

Government and Bank Notes in Circulation

(in 1,000 yen)

year		year		year	
1868	24,037	1875	100,492	1882	143,754
1869	50,091	1876	106,892	1883	132,271
1870	55,500	1877	119,150	1884	124,396
1871	60,272	1878	165,698	1885*	122,457
1872	68,400	1879	164,355	1886*	136,852
1873	79,743	1880	159,367		
1874	93,897	1881	153,302		

Source: Abstract of the Circumstantial Report on the Monetary Reform.

* Bank of Japan notes included.

According to the above figures, the notes in circulation in 1877 amounted to twice as many as in 1869, but the increased demand for money did not give rise to a large value divergence between paper and silver. Quotations for Mexican silver, which should certainly have risen owing to the depreciation of notes, fluctuated not far from the 60 *monme* level. Owing to the civil war in 1877, however, the note issue rapidly expanded, which led to a rising tendency of Mexican silver quotations after January 1879. The trend of quotations is shown as follows:

year	Annual average	Standard level	Monthly figures		
				1880	1881
1868	33.66 monme	45 monme			
1869	43.29	〃	Jan.	81.90 monme	103.68 monme
1870	46.485	〃	Feb.	83.34	104.76
1871	{ 44.01 58.68	〃 60 monme	Mar.	86.10	106.44
1872	61.08	〃	Apr.	92.94	107.70
1873	62.16	〃	May.	82.38	97.20
1874	62.28	〃	June.	82.02	97.50
1875	61.74	〃	July.	82.68	97.68
1876	59.34	〃	Aug.	83.22	97.74
1877	61.98	〃	Sept.	89.34	101.40
1878	65.94	〃	Oct.	99.06	104.04
1879	72.72	〃	Nov.	101.16	101.52
1880	88.62	〃	Dec.	99.54	101.70
1881	101.76	〃	average	88.62	101.76

Source : *ditto.*

The above figures up to September 1879 are the quotations of Mexican silver and since then those of one yen silver coins.[24]

Those up to Dec. 13th 1879 are converted into units of *Ginme* against one dollar of Mexican silver, and those since then into units of 60 *monme*.

Quotation of Mexican silver after the promulgation of New Currency Regulation, as above shown in comparison with notes in circulation, had no longer measuring as an exchange rate, nor did they reflect continued adverse balance in foreign trade. As clearly shown by the above figures, quotations reflected a divergence between silver and paper, due to the depreciation of paper money.[25]

After the civil war in 1877 this divergence had been intensified by the expansion of in convertible notes, and accordingly Mexican silver rapidly appreciated, quotation being 104.04 *monme* in October 1881. This rise did not always pararelled the expansion of the note issue, but there was no doubt that this was presumably due to speculation in Mexican silver dealings.

Before the Restoration, when Mexican silver functioned as trade money, it had been necessary for exporters to sell it and for importers to buy it, and accordingly exchange brokers visited trading firms for buying or selling of Mexican silver and to adjust the demand and supply. The development of foreign trade and the increase in the number of exchange brokers resulted between 1861 and 1864 in the establishment of Chamber of Exchange Brokers, where they assembled for dealings. After the Restoration speculative transactions in Mexican silver became more and more active. In order to stabilize quotations and meet the abrupt rise after the civil war, Mr. Shigenobu Ōkuma, the then Finance Minister, established a Mexican Silver Exchange at Yokohama in February 1879, which was later renamed the Yokohama Exchange.[26] In October of that year, transactions in gold and silver coins were opened at the Tokyo and Ōsaka stock exchanges in addition to the Yokohama Exchange, to contribute to the promotion of foreign trade through stability in the exchange rate of gold and silver coins as the standard money.[27] However, Mexican silver speculation continued without the least improvement. At the Yokohama Exchange, spot dealing was settled through differentials without delivery of actual silver. The government prohibition of fictitious transaction and the order that transactions should be carried out through spot delivery[28] was of no avail. In May 1880, future transactions in gold and silver coins were prohibited[29] and a call was prohibited for a while because of sharp fluctuations.[30]

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[24] *ditto*. Sept. 12th 1879.

[25] Tokyo Nichi-nichi Shinbun, Oct. 15th 1879.

[26] Marquis Okuma, His Life for 85 years, Vol, 1, p. 722.

[27] Tokyo Nichi-nichi Shinbun, Oct. 4th 1879.

[28] *ditto*, Dec. 13th 1879.

[29] *ditto*, May 21st. 1880.

In order to prevent the rise in silver prices and to promote the smooth operation in silver transactions, Mr. Ōkuma placed silver coins on the market through the First National Bank, the Mitsui Bank and the Yokohama Specie Bank in March 1880. Owing to this measure, the price rise stopped temporarily, but restarted as soon as the sale was suspended. From September of that year he thought to remove the divergence between silver and paper through the redemption of notes.[31]

Quotation of Mexican silver rose with the depreciation of paper money to the highest point in the autumn of 1881, two years later than the peak in the note issue, the note redemption policy, earlier intended by Mr. Ōkuma, was firmly established in the autumn of 1881 by Mr. Masayoshi Matsukata. Since then the divergence between silver and paper was gradually reduced by the fall in silver prices as well as the appreciation of notes. A serious deflation crisis followed until the divergence disappeared at the end of 1885 when one yen silver coins became equal of one yen notes. This also signified the disappearance of Mexican silver quotations.

As mentioned above, *Ginme* as money by weight was merely a nominal money of account, during the time when it was used as an indication of Mexican silver quotations, which early meant the exchange rate and later the silver price in terms of inconvertible notes. Silver quotations in this sense disappeared in January 1st. 1886, when Japan's currency system came to be based in fact on the silver standard.

The price of *Ginme* lost its real meaning and become nominal by the issue of *Nanryo*, one-bu-silver coins as token-money, but after the abolishment of *ginme* transactions in the starting year of Meiji (1868) it acted as a nominal evaluation unit or money of account, thereafter it was used as an indicator of Mexican silver quuotations until December 13th 1879, and also as a price indicator of other commodities, as *rin* (1/1000 yen) and *sen* (1/100 yen) were the latter function of the *Ginme*, which of course has been gradually replaced by the *sen-and-rin* indicator, has remained partly effective locally for a considerable time. According to the examples given in Text Book of Soroban (Japanese calculating machine) edited by Bunjiro Watanabe (1890), *Ginme* was at that time merely an evaluation unit expressed in terms of 60 *monme* of silver equivalent to one yen.[32]

This characteristic change of the prices of *Ginme* and Mexican silver and the retreat of their importance reveals the gradual transition from the old Japanese to the new economy through the New Currency Regulation. Spot silver exchange quotations indicated by the price of *Ginme* and Mexican silver signified the transition to a modern exchange system realized by a combination of that Regulation and foreign trade.

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[30] *ditto*, April 20th 1880.

[31] Marquis Ōkuma, Vol. 1, p. 728.

[32] Complete work on Arithmetics, edited by Bunjiro Watanabe, 1890.

Where the quotation of Mexican silver as an exchange rate once implied the divergence between silver and paper, there appeared the modern exchange rate. As a result of the New Currency Regulation of 1871, standard gold coins and one yen silver coins were minted, the parity being 1 to 16.01.[33] Since the circulation of one yen silver coins was allowed only within open ports, the New Currency Regulation should have established the principle of a gold standard combined with restricted standard silver coins. However, owing to the successive issue of inconvertible notes since the Restoration and the huge outflow of gold coins caused by the unfavourable balance in foreign trade, in spite of the increased issue of gold coins after 1871, Japan really remained an inconvertible note country on a silver basis. Thus the Japanese foreign exchange rates at that time, which were so-colled silver exchange rates, are determined by the exchange relation between the one yen silver coins and foreign gold coins based on the parity of silver and gold. According to the figures taken from the "Statistical Yearbook," the exchange rate on London traced a continual downward course due to the decline in silver, from 4 shillings 2 pence to one yen in 1874 (annual average to 2 shillings in 1897, at the depreciated rate of which the yen was connected to the pound sterling by the establishment of the gold standard. Exchange bill transactions were carried out by foreign bankers, but later also by the Yokohama Specie Bank.

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[33] Finance Ministry's Decession of April 1872 ; New Currency Regulation of May 1872.

ARE JAPANESE *TURU* AND *ITO* RELATED TO KOREAN *TURUMI* AND *SIL* RESPECTIVELY?

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I

For a long time now deep interest has been felt in the affinity problem of Japanese. This situation has resulted in various suggestions being put forward. But if the theories expressed hitherto are broadly divided into two, the two types may be called the 'Northern hypothesis' and the 'Southern hypothesis.' However, as far as concerns a matter of genetic relationship—setting aside the question of borrowing—, it cannot be considered that a single language can be simultaneously traced directly back to two separate parent languages. Consequently the 'Northern hypothesis' and the 'Southern hypothesis' are incompatible, and in fact they have competed with one another. But it is difficult to come to a final conclusion as to which of the two is actually correct. Be that as it may, the two hypotheses have a point of difference in their character. To use an analogy, it may be described as follows. The 'Southern hypothesis' might be acceptable if it did not deceive itself by making such errors as '*Nine divided by three gives tree.*' The example is, perhaps, ridiculous, but it seems to be upon the basis of such ridiculous etymologies that the 'Southern hypothesis' is built (see below, note 25). The 'Northern hypothesis' on the other hand, to judge it in the light of the orthodox dogma of comparative philology, can definitely not be regarded as something proved, but there is less fear in it of confusing '*three*' with '*tree*' by their accidental resemblance. The 'Northern hypothesis' is more likely to say '*Ten divided by three gives three.*' This is the error inherent in the use of large and rough figures in a calculation.

Naturally it is possible, by means of elucidation as tried by some scholars, to reconcile the 'Northern hypothesis' and the 'Southern hypothesis.' This elucidation is to say that Japanese owes its structure largely to Northern languages and owes its vocabulary largely to Southern languages. However, firstly, if prehistory is taken into consideration here, the lexical influence of southern connections (even if we assume that such a phenomenon occurred in Japanese) must be very old: in any case it must be regarded as anterior to the time when the influence of the culture from the north, which can be discovered archaeologically, swept powerfully over the islands of Japan. At the same time it must also be borne in mind that the waves of culture from the north must have come to Japan one after another over a long period.

Secondly, if it is assumed that a language of northern affinities was united with a substratum of a language of southern affinities, I am uncertain myself to what extent the structural characteristics of the former could be grafted on to the latter. If we are justified in thinking that vowel harmony which once existed in ancient Japanese[1] lends itself as one proof of affinity, or at least, if we place main emphasis on the structure of Japanese, the discussion of the affinities of Japanese tends more to the advantages of the 'Northern hypothesis.' In other words, the 'Northern hypothesis' of Japanese is all the more difficult to subject to disproof strong enough to reject it. Only the problem is not only to look for specific characteristics of structure (to which vowel harmony also belongs so far as it remains a phonological *feature*), but to establish actual sound laws based on the comparison of individual words. Many scholars have exerted themselves on this work, and it is now clear that it is not an easy task to establish most convincing sound laws. After all, they cannot give a more exact answer than 'Ten divided by three gives three.' Of course, an approximate value will do to a certain extent, but still, as we know, verisimilitude is, regrettably, not proof.

The languages with northern affinities (i.e. those which the 'Northern hypothesis' postulates) are none other than the so-called Altaic languages. However, when the term 'Altaic languages' is used, the problem comes to involve the question 'What is an Altaic language?'. Such a problem is outside the scope of my argument. Nevertheless if Japanese is to be classed among the Altaic languages, Korean must all the more certainly be considered to be one of them.

If we consider that Japanese branched off from primitive Altaic extremely early and that it has only a very distant relationship with the other Altaic languages, although such a theory is only one of the possible conjectures, it is theoretically quite natural to assume that Japanese should be a *marginal language* among the Altaic languages or rather to look for the line of affinity in distant places rather than in near places.

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[1] *Cf*. Arisaka Hideyo, *Kokugo on'inshi no kenkyū*, pp. 101–114. However, Hattori Shirō reasonably states that he cannot agree with the opinion that vowel harmony is definite proof of the relationship between Japanese with Korean on the one hand and Altaic languages on the other. This point should receive sufficiently deep recognition by scholars, Altaists excepted. For details, see Hattori's article, "*The relationship of Japanese to the Ryukyu, Korean and Altaic languages,*" TASJ, 3rd series, I, esp. pp. 117–118.

Be that as it may, I here attempt only to deal specifically with the two words in the title of this paper, in the hope of making some contribution to the affinity problem of Japanese by illustrating on the following lines the general picture of how one should face the relevant problem.

II

The similarity between the Japanese word *turu* and the Korean word *turumi* was noticed early. Furthermore, these words can be compared with Altaic languages and also with Uralic languages.[2] Here, I am not concerned with whether or not the Japanese word *turu* is of Altaic origin. I merely admit the possibility that it is so and advance the following arguments.

When the Korean *turumi* and the Turkish forms *turna*, *torna* are compared, it is assumed that the *r* existed in the prototype, and it may be said that the *r* of the Japanese word *turu* also corresponds directly to this. But in fact the Japanese *turu* is not to be dealt with so simply.

In texts, *turu* appears as early as the *Manyōshū*. The character 鶴 is often used phonetically to stand for the two syllables *tu-ru*.[3] From this it is possible to deduce indirectly, that the crane was called *turu* in the Nara period. But there is another fact, as follows. There are many examples in the *Manyōshū* of the character 鶴 used ideographically.[4] In the *kana* renderings which have been added to the *Manyōshū* from the Heian period onwards, the ideograph 鶴 for the name of the bird has always in these cases been rendered, from of old as *tadu*, not *turu*.[5]

Furthermore, we find such examples as the following in the *Manyōshū*.[6]

若浦爾鹽滿來者滷乎無美葦邊乎指天多頭鳴渡 (No. 919)

Waka-no-ura ni siho miti kureba katawo nami asibewo sasite *tadu* naki wataru.

In these poems what was written in *manyōgana* as *tadu* naturally means 'crane.'[7] On the other hand, *turu* signifing 'crane,' as written phonetically in *manyōgana* never appears in the *Manyōshū*. Accordingly, already in the Nara period, (1) *tadu* and *turu* existed side by side as words for 'crane' (2) as in the Heian period and after, *tadu* was a poetic word and *turu* was the ordinary word.

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[2] As far as I know, the first person to link Japanese *turu* and Korean *turumi* with Ural-Altaic was Ogura Shimpei (*Kokugo gogen no mondai* pp. 17–18). But the comparison merely betweeen Japanese *turu* and Korean *turumi* was previously attempted by Polivanov (in *Izvestia Akademii Nauka SSSR*, 1927, quoted by Hattori in the article above p. 120). I touch upon Polivanov's comparison again later in this article, see section IV. There are others who have paid attention to the resemblance between Japanese *turu* and Ural-Altaic languages (cf. D. Sinor, *'Ouralo-Altaique-Indo-Européen,' T'oung-Pao XXXVII*, p. 241 and note 4). But Ramstedt does not include the word *turumi*, for some reason, in his comprehensive *Studies in Korean Etymology*.

[3] In all 54 examples, calculated from the *Manyōshū sōsakuin*.

[4] 鶴 19 examples: 葦鶴 2: 白鶴 1: 鶴群 1. Calculated from the *Manyōshū sōsakuin*.

[5] See the examples collected in the *Kōhon Manyōshū*. Of course, among the variants there are cases where the reading *turu* is found, but there is no example which amounts to proof for rejecting *tadu*.

[6] There are 11 cases written 多豆, 1 多津, 1 多都, 10 多頭 (including 2 *asitadu*).

There are also *kahadu* and *kaheru* as words of a similar type. In the *Manyōshū* there are no examples in which the 'frog' is written with *manyōgana kaheru*, but it is clear that the word *kaheru* existed, since the character 蝦 must be read *kaheru* in the following poem:—

吾屋戸爾黄變蝦手毎見妹乎懸管不戀日者無 (No. 1623)

Waga yadoni momidu *kaherude* mirugotoni imowo kaketutu kohinu hiha nasi.

In the *Manyōshū* no other form than *kahadu* appears, as far as is shown by examples in *manyōgana*.[8] Admittedly there is a theory[9] that the *kahadu* of the *Manyōshū* is the same as *kajika* 'Hyla,' but even if this is accepted, it is no obstacle to considering that *kaheru* and *kahadu* are etymologically of the same origin. Whether or not *kahadu* in the *Manyōshū* really only signified *kajika* is rather doubtful. Incidentally after the Heian period *kahadu* was the poetic word corresponding to *kaheru*.[10]

In Japan, from of old, the various species of frogs have long been differentiated by name e.g. *aogaeru*, *akagaeru*, *amagaeru*, *ibogaeru*, *tonosamagaeru*, etc., and toads have also for many centuries been called *hikigaeru* and *gamagaeru*. In other words, Japanese does not have completely separate words for 'frog' and 'toad' respectively (as English has), but always uses the word *kaeru* as the second part of each compound which differentiates them.[11] However, in the Nara period the Japanese word 'toad' at that time was *taniguku*. In parallel examples this word is once written *taniguku* by *manyōgana*[12a] and once ideographically as 谷蟆,[12b] and so it may safely be analysed as *tani* (valley, glen) and *-guku*.[13] If so, the oldest Japanese word for the generic class of *kaheru* may have been *kuku* (or else *iguku*). It may be that this survived in the compound *taniguku* and that *kuku* itself was replaced by *kaheru* and *kahadu*. If this view is correct, *kaheru* and *kahadu* go back as far as the Nara period, but may well not go back much farther than that. If so, consideration must now be given to the question of which of the two sounds—*r* or *d*—is the earlier in the doublet *kaheru* and *kahadu*. This may perhaps be regarded as a kind of rhotacism, but there are other arguments in favour of the antecedence of the form containing *d*. If, for example, it is true that when a community discriminates between the values of two words in a doublet, its judgement is subconsciously and inevitably influenced by the relative ages of these words, then is it not likely that the form which was consecrated to poetry—in this case, the form containing *d*—was the older?

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[7] There are also cases which employ the character 鶴 as *manyōgana* for the two syllables *tadu* i.e. 鶴寸 for *taduki* (cf. 多頭枳, 多豆伎, 多都吉, 田付, 多付).

[8] See the section on *kahadu* in the *Manyōshū sōsakuin*.

[9] See *Daigenkai*.

[10] It has already been noticed, in the case of the doublets *tadu* and *turu*, *kahadu* and *kaheru* that the former are both poetic words (cf. Saeki Umemoto, *Kokugoshi*, *Jōkohen* pp. 11–14).

[11] Except in the case of *kajika*.

[12a] 多爾具久能佐和多流伎波美 (*Manyōshū* No. 800).

[12b] 谷蟆能狹度極 (*Toshigoino matsuri* and *Ōtonono hogai*, in the *Norito*).

[13] Certainly there is a weak point in this analysis, for though in the *Manyōshū kahadu* is written 河蝦, it would be wrong to analyse this as *kaha-tu*. Also it may be deduced from the fact that *taniguku* was written in *Manyōshū* 971 as 谷潛 that the meaning of *-guku* was not sufficiently clear. But this is reasonable, after the independent word *kuku* disappeared (on my assumption that it was a word in use from ancient times). The writing 谷蟆 as indicated in note 12 appears in the *Engishiki norito*, and accordingly, viewed as textual evidence is later than the *Manyōshū*. However, it may be interpreted as having been written 谷蟆 from ancient times in the tradition of the *norito*, as a set phrase written in a set manner. Since the

Naturally it is impossible to reach a definite decision by such means, but in this event, if we do regard the form containing *d* as the older, changes of words may be diagrammatised as *kahadu*>*kaheru*. However, how did *kahadu* and *kaheru* come into use as a doublet? The change is not only *d*>*r* but involves a shift *a*>*e* in the vowel of the second syllable. What was it that caused the change *a*>*e* as well as changing *d*>*r*? Certainly, if the simultaneous existence of *kahadu* and *kaheru* is explained as a phenomenon of inter-dialect borrowing, it may be as well that the prototype to be restored from these two forms is a separate form identical with neither *kahadu* nor *kaheru*. If such a view is taken, it is very difficult to infer more than that it has some connection with *kahadu* and *kaheru*. However, as far as concerns the correspondence between *d* and *r*, I assume that the *d* is older.

The difference between *tadu* and *turu* on the one hand and *kahadu* and *kaheru* on the other is that the former shows a discrepancy between *a* and *u* in the first syllable. In this respect, the two pairs of words are out of step with each other. For this reason it is not today sufficiently certain whether the correspondence of form between *tadu* and *turu* may be gauged by the analogy of the correspondence between *kahadn* and *kaheru*. However, if it is assumed that *kahadu* and *kaheru* were substituted for *kuku* (as above supposed), in accordance with that it may be concluded reasonably that neither the introduction of the form containing *r* nor the emergence of the situation in which the words became a doublet are so very old.[14] Consequently it goes without saying that if the employment of the form

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phrase in *Manyōshū* 800 (and the phrase in 971 is the same) was based on the phrase in the *norito*, the phrase *taniguku no sawataru kihami* was well-known from ealier times. At least in the tradition of the *norito*, even if there was fear of popular etymology, this had been analysed into *tani* (valley, glen) and *guku* (<*kuku* or *iguku*, frog, toad).

[14] This is my suggestion, but even if the supposition of the form *kuku* is denied, the following conclusions remain valid *ceteris paribus*.

turu arose by a more or less parallel process with the emergence of the doublet *kahadu* and *kaheru*, the *r* of the *turu* in Japanese must belong to far more recent innovation, after Japanese had lost direct contact with Altaic. In other words, whether or not the word *turu* as a whole is of Altaic origin, the *r* comprised in this form is not descended in the direct line from proto-Altaic down to Japanese.

III

The next step is to discuss the possibility of Korean *sil* and Japanese *ito* being related.

For the connection of Korean *sil* with Altaic languages, the Manchurian word for 'thread,' *sirge*, has been compared with it by Ogura Shimpei.[15] In addition Ramstedt provides new material, giving words from Tungus and Goldi respectively.[16] Also, at an earlier date, and from a different viewpoint, A. Conrady suggested that the Greek *σηρικ-* was derived from the ancient Chinese *sir*, via Mongolian.[17] This was accepted by H. Jensen,[18] who added the Manchurian word *sirge* to Conrady's theory. At the same time he quoted the Korean *sil* for comparison, but it may be conjectured that he seems to have thought that the Korean *sil* was derived from the Chinese *sir*. It is difficult to give approval to the idea that Korean *sil* was directly derived from Chinese *sir*, but the various common forms signifying 'thread' which were spread among Altaic languages, or at least a part of them, may be explained as having their primary common form borrowed from Chinese (on the assumption that there was a connection with Chinese at that time) before the various Altaic languages branched off or at a time when they still preserved a close mutual contact. There is more to be said about this point but since it has no deep connection directly with my argument I will not touch upon it further here.[19]

I will confine myself to a consideration of Korean *sil* and Japanese *ito*. For an assumption that they are related, a correspondence between Korean *s* and Japanese *zero* (*non esse* of an initial consonant) must first be explained.

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[15] *Op. cit.* p. 19.

[16] *Studies in Korean Etymology*, p. 233.

[17] *Alte westöstliche Kulturwörter. Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaft.* Phil-hist. Kl. 77, 3 Heft. p. 6.

[18] *Indegermanisch und Chinesisch, Hirt-Festschrift* II p. 140. However, as is clear from his note, Jensen's enlargement was based on the article 'Seide' in volume II of Shrader—Nehring's *Reallexikon der idg. Altertumskunde.* Accordingly his quotation of the Korean form as *sir* was based on the *Reallexikon.*

[19] Conrady wrote '*sir* (ser), Seide,' but it is completely obscure why he made such a theory. Both the reconstruction of the form *sir* and the assumption of the meaning *sir* 'silk' are truly incredible to me.

Here at least the correspondence Korean *sɛbi*—Japanese *ebi* (<*i̯ebi*) ‘lobster, prawn, shrimp’ can be adduced.[20] Also, if we go back as far as the ancient Japanese language, it may be surmised that the *s* of modern Japanese was originally *ts*,[21] and accordingly, if we assume that there was a sound *s* in ancient preliterate Japanese (distinct from the *s* of modern Japanese), it may be conjectured that this *s* disappeared before the dawn of the historical period. Since there are cases[22] where even the assumed original *ts* is thought to have dropped out, the supposition that *s* disappeared is not a rash one.

Next, in order to equate *sil* and *ito* linguistically, the correspondence between Korean *l* and Japanese *t* must be explained. There are examples such as Korean *pɔl*—Japanese *hati* (<*pati*) ‘bee’ and Korean *mul*—Japanese *midu* ‘water’. One of the great differences between Korean and Japanese is that the former has many syllables ending with a consonant or consonants. It may be that this is mainly the result of the dropping out in Korean of the vowel elements which originally existed.[23] The process of change from $t>l$ may be assumed to be—*t*—>—*d*—>(—*r*)>—*l*. In Korean (apart from dialects) the appearance of *l* at the end of a syllable is a special feature of the language, and it is worth noticing that in the pronunciation of Sino-Korean, final *t* of ancient Chinese is represented by *l*.[24]

In this way I have ‘cooked up’ a correspondence between Korean *sil* and Japanese *ito*. But as I made clear in advance at the beginning of this section, I am discussing this as a *possibility*. It is not my intention to assert that *ito* and *sil* are definitely related (and I wish this point to be fully appreciated). I merely surmise that Korean and Japanese must certainly have passed through many numerous independent sound changes in the period prior to the first extant texts. Nobody can guarantee that not only the dropping out of vowels but also phenomena such as the contraction of vowels resulting from the dropping out of intervocalic consonants did not often occur.[25] For this reason it must be borne in mind that one should be prepared rather to take into consideration cases of etymological correspondence existing between words which, at a glance, have no resemblance. This does not mean of course that there is much hope of real success in finding such correspondence. But we must not despair; we should persevere and continue to hope for the best.

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[20] With reference to Korean *sebi* the Manchurian examples *sampa*, *sam-p'a* were pointed out by Ogura, *op. cit.* p. 18.

[21] *Cf.* Arisaka Hideyo, *op. cit.* pp. 143–156. It is confirmed that at least the syllable *sa* was [t͡sa] still at the beginning of the Heian period.

[22] -sine : ine ; -same : ame ; suuru : uuru ; sutu : utu ; -siha : iha ; se : i̯e.

[23] *Cf.* Hattori's article p. 120. Incidentally, *toinsiot* developed out of a consonantal cluster. Theoretically it is reasonable to regard initials such as *psk*-, among these consonantal clusters, as having arisen from the dropping out of vowels.

[24] No doubt the representation of Sino-Korean of Chinese final *t* as *l* reflects the stage in which in Chinese itself the final *t* had changed into *r*. However, at the time when in China the dental final *t* became *d* and then *r*, the labial final *p* and the guttural final *k* were also changing to *b* and *g* respectively : for all that, the labial final of Sino-Korean remained an implosive *p* and the guttural final *k* an implosive *k*. The fact that the representation of dental final *t* differs from *p* and *k* is because the tendency inherent in Korean itself did not fail, in the case of *t*, to follow the changes that took place in Chinese. In other words, the causes of this particular asymmetry cannot be sought elsewhere than in the history of Korean itself. (That Chinese *p*, *k* and *t* followed the course $p>b$, $k>g$ and $t>d>r$ is clear from many materials of various kinds. It may also be mentioned that the final *p*, *k* and *t* in Chinese were implosive).

IV

A point about which I must finally add a comment is the difference between genetic relationship and borrowing. Even if *turu* (I make no mention here of *tadu*) and *ito* (this belongs to cultural vocabulary) are related to Korean words, this gives at the present stage no evidence concerning the question whether they are words directly handed down from a parent language or whether they are borrowings.[26]

Polivanov[27] placed *asa* and *atʃɒm* 'morning' side by side as an example parallel to *turu* and *turumi.* I cannot agree with this proposition as it stands. Apart from *turu* which was dealt with above, there is the following difficulty about *asa* too, namely that in ancient Japanese, to represent the Japanese word for 'morning' there was *asita*, used side by side with *asa*. Was not *asita* chronologically earlier than *asa*? It is highly probable that in ancient times, [s] was [ts] (see note 21). It may be assumed that such a change as [atsïta]>[atsa] arose dialectically, and as a result of an interplay of dialects arising from some cause, cultural or political, *asita* and *asa* became current as synonyms within the same dialect. Finally *asita* was relegated to poetic usage.[28]

If there is any truth in Polivanov's proposition, it seems appropriate to me to offer the following interpretation, namely, that there was a fairly close relationship between an ancient language, as used in the south of ancient Korea, and Japanese. The word for 'crane' in the former was *turũ,* and the word for 'morning' was *asã.* This and the Japanese *asita* go back to a form *asitam-*. An ancient Japanese *dialect* borrowed *asã* and *turũ* afresh from an ancient south Korean *dialect.* If this is true, my theory, given above, about the origin of the form *asa* must be understood as having arisen *mutatis mutandis* in ancient Korea. But whether *turu* itself as an individual case must be exclusively regarded as a borrowing *of this kind* is still far beyond a final conclusion, even if I am inclined to favour an assumption[29] that there was a close linguistic—not to say dialectal—connection between ancient Japanese and the language used in certain parts of ancient South Korea, and that this language itself had already in the remote past succumbed to a new language (though ultimately of the same stock) from which modern Korean is directly descended.

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[25] The history of the Ryūkyū language may endorse the possibility of such a hypothesis. Incidentally, those who side with the 'Southern hypothesis' should pay more attention to such possibilities.

[26] Concerning the point where it is no longer possible to make a difference between genetic relationship and borrowing, see my paper: *Nihongo keitōron no mondai* (in the *Hitotsubashi Ronsō* XXI and XXII) pp. 242–244 of Vol. XXI. It may be mentioned that 'a parent language' here does not necessarily mean 'proto-Altaic.'

[27] See note 2. Also cf. Ramstedt's *Studies* pp. 3–4.

[28] The word *asu* 'tomorrow' may also be a doublet of *asa*, derived from *asita*, passing through a similar development. (*asita* subsequently in colloquial speech became a synonym of *asu*, meaning 'tomorrow'). It may be added that in the Ryūkyū language the word for 'tomorrow' is *attsa*, *atsa* or *atʃa*, whereas the word for 'morning' is the same as in Japanese, i.e. *asa*. The forms *attsa* etc. derived from *asita* by an independent sound change in the Ryūkyū language. It may be noteworthy that the *attsa* means 'tomorrow' only and not 'morning' and there is no form corresponding to Japanese *asu*.

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[29] As put forward by Kōno Rokurō in his outstanding work, *Chōsen hōgengakushikō p.* 172 *et seq.*

THE “BOXERS” IN 1898-1899, THE ORIGIN OF THE “I-HO-CHUAN” (義和拳) UPRISING, 1900

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I

The Boxer incident which occured in 1900 must have appeared very strange from the Western viewpoint. The prime movers of the uprising, which aimed at the sweeping away from China of all Western people and their products including spectacles, clocks and so forth were groups of farmers, sailors, unemployed soldiers and city proletarians who believed in the magic effect of the so-called Shen-chüan 神拳 (god’s fist, spiritual boxing) and who thought themselves invulnerable to gun-fire. The Empress Dowager, Tsu Hsi of the Ch’ing Dynasty, who was barely maintaining China’s political independence after the defeat in the first Sino-Japanese War (1894-1895), ordered her imperial army to besiege the Peking legations together with the Boxers, and provoked the “war against the world” in June 1900. It is natural that Westerners were impressed by this “midsummer madness.” From an outsiders’ point of view this decision of Tsu Hsi was, indeed, beyond comprehension. But when one examines the original sources and the Chinese literature[1] on this event a little more closely, and considers the situation which confronted the regime in connection with the peculiar construction of Chinese society, one knows that the madness was inevitable even if indeed it was madness, and events which seemed a mere hazard were really possible in the situation of the time.

The Boxer incident was a climax and turning point in the modern history of China. On the one hand we may say that it was a movement with which traditional China endeavoured to defend and conserve her ancient standards, against the impact of the capitalist and imperialist West. But as it was the last, biggest, and most desperate effort to resist foreign and Christian influence, its failure inevitably brought about a great change in Chinese history.[2] Within the country, the conservative group in the court which overwhelmed the reform movement of 1898 completely lost leadership.

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[1] Literatures and sources on this uprising, both Chinese and foreign, were recently (1951) compiled by historians of the Peoples’ China, and published as “I-ho-tuan” 「義和団」中国近代史資料叢刊第九種 in 4 volumes.

[2] Clements P. H.; “The Boxer Rebellion”, 1915, p. 15.

The Ch'ing dynasty itself began to show definite signs of collapse. To the foreigners it offered a chance to provoke the Russo-Japanese War (1904-5), which resulted in Japan's rapid expansion and advance into the northeastern part of China. And so it was indirectly one of the chief movements that rouse the Chinese intelligentsia into action against foreign "Imperialism." This two-sidedness in its character, that while it had rather conservative and even reactionary intentions, it also had brought about, new currents of thought and events in China, was the result of the complex situation of the time.

The development of the disturbances since the spring of 1900 has been treated and included in many books, but the situation in 1898 and 1899 in which the movement originated has not been treated thoroughly enough.

The following essay aims to clear up these rather neglected points by using Chinese sources.

II

With regard to the genesis of the Boxer uprising, its relation to the Ch'ing government has been debated to this day.[1] There is no doubt that the Boxers had been recognized and protected as patriots since June 1900. But in 1898 and 1899, i. e. in the first stage of their development, some say that they were the militia organized by imperial decree under the supervision of the Manchu government, whilst others consider that the nature of the uprising was spontaneous and had no connection with the government and officials.

For instance, G. N. Steiger insisted that the Boxers were neither anti-governmental nor a religious secret society, but they were a corp of volunteers organized by the government in order to resist the invasion of the Western powers. He stressed the fact that the uprising originated not in middle and southern China, where the revolutionary trend was traditionally strong, but in the northern and northeastern areas where the people were loyal to the Ch'ing dynasty to the last even in the revolution of 1911. He further used data in European literature to conclude that the Boxers were organized according to a decree on the establishment of the Tuan-lien 団練 (village militia), which the Ch'ing government issued for Shan-tung, Chih-li, and Fêng-tien provinces on November 5th, 1898.[2]

On the other hand, Manabendra Roy judged that this incident was a reaction of peasant farmers to their poverty and misery caused by feudalistic exploitation. He asserted that the connection of the Ch'ing dynasty with the Boxers was just "fortuitous" and a "temporary" expedient even in the summer of 1900.[3] Chujo Ichiko has another opinion. He considered the Boxers a religious and secret association, a branch sect and remnant of the Pai-lien-chiao 白蓮教 (White Lily Society) which was a group of rebels in the Chia-ching 嘉慶 period. Naturally its tendency was opposed to that of the Tuan-Lien, which was a semi-governmental police and military system for the suppression of revolutionary activities and the protection of the dynasty, gentry, and landlords.[4]

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[1] R. Hart who was among the beseeged in Peking, too, questioned this point ("These from the Land of Sinim" 1903, p. 150). It was also a object of discussion recently among the students of modern Chinese history in Japan ("1952 nen no Rekishigakkai, Shinmatsu Minsho" by Chujo Ichiko, "Shigaku Zassi", No. 2, vol. 60, 1953).

[2] G. N. Steiger: "China and the Occident" 1927, p. 128-145.

With regard to this, I should like to indicate a source which has not been previously quoted. A decree of May 23, 1898 included in "Tê-tsung Shih-lu" 徳宗実録, (Record of the period under Emperor Kwang-Hsü) reads as follows, "Decree for the grand counsellors : ' Send a telegram to Wan Wen-shao 王文紹 (the Viceroy of Chih-li). I learned by a telegram from Chang Ju-mei 張如梅 (the Governor of Shan-tung) that there appeared a group of people who call themselves without official sanction "I-min-hui" 義民会 (Society of the righteous), on the border of Shan-tung and Chih-li provinces, and who are distributing placards in Chih-li, An-hui, and Kiangsu provinces to prepare an attack against foreigners and Christians. There are many persons training in boxing in the prefecture of Tung-min-hsien 東明縣 in Chih-li and Kuan-hsien 冠縣 in Shan-tung, and we hear that they are spreading their cause through placards and notices. Taking advantage of this situation, brigands may cause disturbances. Order Wang Wen-shao, Chang Ju-mei, and Liu Shu-tang 劉樹堂 (the Viceroy of Honan) to send adequate men to the localities for precise investigation and to urge the local officers to prohibit their agitation. In Kiangsu province, distant as it is, there are a great mass of starvelings at present, so they may combine and make general unrest. Order Liu Kun-i 劉坤一 (the Viceroy of Liang-chiang provinces) to urge his men to investigate and prevent the further expansion of the disturbances.' Before long Chang Ju-mei reported as follows' As a result of our investigation, we learned that the body reported as "I-min-hui" was "I-ho-tuan" 義和団 (Society of I-ho boxers). There are no signs at present which indicate any trouble. When we have established Pao-chia 保甲 (neighbourhood) and "Tuan-fêng" 団防 (village militia) systems in these areas, we are going to include the Boxers in the "Hsiang-tuan" 郷団 (village militia unit), and send competent men to take controle of them in due time."[5]

This seems to me to be the oldest record about the Boxers in the Kwang-hsü period. According to this record, the body of Boxers had already been organized as a group training for pugilism and as an antiforeign movement in May 1898. It is no doubt wrong, therefore, when Steiger says that they were organized for the first time under the decree issued on 5th November 1898. But on the other hand, I cannot agree with Roy's opinion who believes that the Boxer activities were mainly due to economic exploitation and poverty, and Ichiko's who insists that the boxers had no connection at all with the govermment and militia system. The attitude of the boxers from the beginning was anti-foreign and anti-Christian, their concern international rather than internal. From the above-cited record it seems quite possible that they might have had some very intimate relation to the village militia, because the authorities of Shan-tung province have revealed their intention to accept the Boxers into the "Hsiang-tuan" to control them, and to this the Peking government, too, seems to have given tacit consent in May 1898.

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[3] M. N. Roy: "Revolution und Kontrarevolution in China" 1928, p 144-146.

[4] Chujo Ichiko: "Giwaken no seikaku" p. 245-267 (Included in "Kindai Chugoku kenkyu" compiled by Gakujutsu Kenkyu Kaigi, Kindai Chugoku Kenkyu tokubetsu-iinkai).

[5] "Ta Ching Tê-tsung Ching Huang-ti Shih-lu" 大清徳宗景皇帝実録 vol. 418, p. 2B.

III

One of the Chinese sources which should be referred to for the genesis of the Boxer uprising is "I-ho-ch'üan Chiao-men Yüan-liu-kao," 義和拳教門源流考 (The origin of a secret society called I-ho-ch'üan) and its "Shu-hou" 書後 (postscript) compiled in October 1899 by Lao Nai-hsüan, a magistrate of Wu-chiao 呉橋, Shan-tung province.[1] Lao Nai-hsüan considers the Boxers nothing but a branch sect of the famous White Lily religion (Pai Lien Chiao) which was prohibited and oppressed as a dangerous revolutionary society by the Peking government since 1808. To show this in a concrete and historical way, he compiled decrees and memorials issued for the suppression of this movement extending from 1808 to 1815, and annotated and explained in the following manner. The I-ho Boxers of the early 19th century were a group of brigands, who conspired with lower officials in local government and rendered them a kind of police service, and trading on this, ran gambling houses and oppressed peaceful citizens in the areas of Ying-chow, Hao-chow, and Hsü-chow of Chiang-nan, Kuei-tê of Ho-nan, and Tsao-chow, I-chow, and Yen-chow of Shan-tung. They were almost cleaned up by 1815, but the superstition of magical boxing originally taught by them survived and those who believed and trained in it at last in 1898, taking abvantage of the strong antipathy of the people against foreigners and Christians, fomented an uprising with anti-foreign and anti-Christian slogans.[2]

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[1] "I-ho-chüan Chiao-men Yüan-liu-kao" (義和拳教門源流考), compiled by Lao Nai-hsüan (劳乃宣), is included in Vol. IV, p 433-9 of "I-ho-tuan" (中国近代史資料叢刋第九種義和団, 中国歴史学会) above-cited, and its "Shu-hou" (postscript) is in Vol. II, p 1A-4A of "Chüan-fei Chi-lüe" (拳匪紀略) compiled by Chiao Te-sheng 僑析生.

[2] Ibid. "I-ho-tuan" p. 433.

It is not easy to ascertain the relation between the Boxers at the beginning of the 19th century and that at the end of the century. But apparently there is a big difference in their behavior. According to the statement of Lao Nai-hsüan, Boxers in 1899 were above all exclusionists and nationalists. "Their party declares that they will only oppose foreigners and Christianity, and never cause any disturbance among peaceful people, or against the government and officials. So in areas where Christians and the common people were hostile to each other, the non-Christian people were finally misled and agreed to the movement, because they were impressed by righteous indignation, and overlooked its magical spiritualism or spell. Even government officials made no investigations and prohibition, but some of them went as far as to applaud the Boxers as patriots and righteous people"[3] "Of course the Boxers were pretending that they were only protecting themselves by boxing, but under this cloak they kept the belief of the Pa-koa 八卦 religion. The plot of the rebellion and the origin of its magic cult are known only by some chief leaders. Not only outsiders but people introduced into the group are kept in ignorance except a few. Consequently both the cunning of the bad people and the foolish of the peaceful people followed the party. The Boxers thus contain gentry, and rich official families as well as poor and desperate people."[4] "The party's slogan is to support the Middle Kingdom and to destroy Christianity. If the people who were deceived and oppressed by Chinese converts and foreigners, join this sect, they can resist and control them. So a great mass of people came to believe this, and called the society I-min-hui (Society of the righteous): this is proof that the people regarded them as just and not as wicked. Last year, a committee of Shantung province called on them for investigation and said in their report 'the purpose of their pugilism training is solely to protect their persons and property. Their talent and ability in boxing is very good. And yet they have caused no trouble hitherto despite their force and strong influence,' and also stated that 'They respect i-ch'i (義気) and always show a frank and straight mind. When they see a person treated unjustly or any injustice happens before their eyes, they at once attempt to correct it, even at the risk of their own lives. So if by any means we can guide them and convert their private interest to public concern, and give their bravery a proper orientation, then we might expect them to be useful in a national emergency.' This is proof that they were respected as sound and righteous by the government officials."[5]

Of course there can be no doubt that the "I-ho" boxers were a kind of "Hui-tang" (secret society) and "Chiao-men" (heterodox religeon), which have been watched constantly as a dangerous germ of revolutionary power by the central government. They organized their private association for armed practices. They propagandised and incited a magic cult. And depending on this private force, they took charge of the settlement of trouble, between farmers and converts or landlords and foreigners, without application of the state-law, which was quite incompetent and ineffective against the foreign invasion. They established a patriarchal order among themselves and their believers as "Ta-shih-hsiung" 大師兄 (Eldest teacher-brother), "Er-shih-hsiung" 二師兄 (Second teacher-brother) etc. Those are apparent traits which show that they were not at all different from the usual form of Chinese religious, secret and revolutionay societies.

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[3] Ibid. "I-ho-tuan", p. 438.

[4] "Chüan-fei Chi-lüe" part II, vol. 2, p. 2A.

[5] Ibid. p. 2B.

Lao Nai-hsüan's as well as Ichiko's opinion that they were a branch sect of the Pai-lien or Pa-koa 八卦 religion, and also a group which could be politically dangerous to the Ch'ing government is quite right. But at the same time the Chinese government in 1898 did not try to suppress them in the first stage of their development; on the contrary, they even applauded and protected them. In the memorial of Chang Ju-mei presented in May 1898 as mentioned above, he stated "When we have established 'Pao-chia' (neighbourhood) and 'Tuan-fêng' (village militia) systems in these areas, we are going to include the Boxers in the 'Hsiang-tuan' (village umit)," and in the decree of June 6, 1900, we see "recently 'I ho-tuan' Boxers guarded their native towns with their skill and talent for self-defence. They have never caused any trouble hitherto."[6] Also in the decree of June 29, 1900. "Before this, there was a kind of rebels (luan min) in the provinces of Shantung and Chih-li, who were training in boxing and cudgeling in each village, and to this, they added a mysterious doctrine. Owing to the local officers' negligence in investigation and observation, they instigated a general agitation which expanded over a very wide area within a short time."[7] Judging from these statements, it is obvious that the Boxers were connived at or even encouraged by local officials in the beginning of their formation, and with this governmental support, grew very rapidly. And in this point I cannot follow Ichiko's opinion which assumes that the Boxers and the government were very much hostile to each other, and there could be no connection at all between "I-ho-tuan" groups and village militia because they had contrary orientations.

Of couse there have been many writers like A. Smith and H. B. Morse, who thought that the Boxers had intimate connection with the government.[8] But at the same time almost all of them attribute the establishment of this close connection between the Boxers and government to the fanatic conduct of Yü Hsien (毓賢), a Manchurian official of reactionary and anti-foreign tendency, who served as the Governor of Shan-tung from December to March, 1899. For example, A. Smith charges that "if Yü-hsien had done his duty as the Governor of a great and populous province for the welfare of which he was responsible, that (Boxers') Society would have been put down by simply following up the crushing defeat which the Boxers had met (in October 1899) at Sên Lê Tien. The fact that he repudiated the success which his troops had won, and threw away its results, could only be accounted for upon the supposition that he had good reasons for his conduct, and in China no better reason for any act can be assigned than that it is commanded by the throne."[9]

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[6] "Tê-tsung Shih-lu",, Vol. 463, p. 5B.

[7] Ibid. vol. 465, p. 3A.

[8] A. Smith: "China in Convulsion", 1901, vol. 2, p. 165–180, 192. H. B. Morse: "International relations of Chinese Empire". 1918, Vol. III, p. 179–180, p. 186–189.

But as we saw above this condemnation is only partly correct. The existence of the society was found by Chang Ju-mei who preceded Yü Hsien as a Governor of Shan-tung, and who was not especially anti-foreign nor anti-Christian in May, 1898. And Chang Ju-mei intended to induct the Boxers into the local police and militia system, because he was moved by the current of the time, and also the peculiar system of Chinese society made it inevitable.

IV

The Boxer incident is a product of the imperialistic age when the western powers endeavoured to extract from defeated and helpless China any rights and interests which could be gained by any means. Diplomatic relations between China and the powers, as well as between the powers themselves, became complicated, and a deep antipathy grew between them.

And this feeling of antipathy, or the conflict resulting from this antipathy, made the attitude of the Western powers more and more aggressive, and this aggressiveness made the Chinese more and more obstinate and furious.

On November Ist 1897, two German Catholic missionaries were murdered at Chü-yeh in southwestern Shan-tung, and at once the Germans occupied Chiao-chow Bay according to a premeditated and prepared plan and this induced Russia to occupy Port Arthur (January, 1898), England to request the lease of Wei-hai-wei in the north, the non-cession of the Yangtze provinces in central China (Febuary, 1898), and France to occupy Kuang-chow Bay in the South (April, 1898) to recover and maintain the "Balance of Power." These forcible policies of the Western powers, and the successive submissions by the Chinese government, were immediately followed by the cession of Kow-loon peninsula to England and the Japanese demand for non-alienation of Fu-chien province (April, 1898). From December 1897 to April 1898, the powers requested and demanded incessantly, and China yielded and surrendered continuously, and then in May 1898 as said above, the first signs of Boxer activities were recorded in "Tê-tsung Shih-lu", the public record of the Ch'ing dynasty.

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[9] A. Smith : Ibid. vol.I, P. 167-8.

The successive concessions were inevitable because of financial embarassment, corruption of the army, and the critical conditions of the public peace in the country after the Sino-Japanese War (1894—5). The situation became worse and worse in 1898. The military expenditure entailed by the War and reparations of 230 million taels led finally to utter bankruptcy. The prewar foreign debt amounting to 15 million taels grew to 200 million and this necessitated generous grants of shipping, mining and railway concessions to foreigners. In order to secure the redemption of debts, foreigners supervised the government revenue. "Chiao-shin-Ku-piao", a domestic loan of 100 million taels was issued in 1898, but only one half of the total amount was absorbed, though the government was ready to bestow official positions on those who subscribed, and also to coerce those who did not.[1] As the central government weakened, the transfer of revenue from local governments was delayed or stopped entirely. And when sent to Pekiug, it was not in real silver but in exchange drafts of "Shan-si Piao-hao" (Bankers association from Shan-si province) which very often were difficult to convert into cash. As regards the salt-tax and li-kin it was estimated that about fifty per cent were held up by local officials.[2] The tax burden on farmers and petty merchants increased, whilst the government faced a financial crisis.

The corruption and inefficiency of the military system at the time was already revealed by the defeat in the Sino-Japanese War. Among local officers and generals, vices such as Kung-ê 空額 (peculation of expenditure on fictitious number of forces), Ko-kou 剋扣 (peculation of expenditure through reducing the real payment and ration for existing forces), or Tan-pai 攤派 (imposition of military expenditure on towns and villages) became excessive,[3] whilst on the other hand, the pay of the lower officers and men was reduced, delayed, or even stopped entirely. Soldiers were thus compelled to neglect military training, and engage in agriculture and industry, or combine with brigands and live on smuggling of salt or opium, gambling and other roguish business.[4]

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[1] "Tê-tsung Shih-lu", vol. 415, p. 7A (20 th d., IInd m., 24 th y. of Kwang-hsü).

[2] Ibid. vol. 441, p. 13A (30, III, 25 K.).

[3] Ibid. vol. 414, p. 17B (26, I, 24 K.).

Through the experience of defeat, the dynasty had alrealy learned that it was inevitable to westernize and modernize the equipment and training of the army. But this was financially impossible for the Peking government which felt difficulty to maintain even inefficient and poorly equipped forces. So attempts were made to raise money for new armament by reducing the number of soldiers and curtailing military expenditures (Tsai-ping Chie-hsiang 裁兵節餉).

A decree issued in December 1897 immediately after the German occupation of Chiao-chow Bay tells us, "For two years since the termination of the War, officials in and out of the court insisted upon a policy of military strengthening, whilst the international situation was getting more and more critical. Our negotiations with foreign countries always resulted in our defeat. It is because the powers, taking advantage of the weakness and corruption of our country, in alliance are looking for a chance of invasion. The essential point of national defence is the perfection of armament and military preparation. However, the financial unbalance between revenue and expenditure is too great at present. So I have severely and repeatedly admonished Governors, Viceroys, and Generals of the provinces to stop the exploitation of the likin-tax and to weed out superfluous soldiers……and to inspect and prohibit fictitious amounts."[5] A decree issued on Feb. 20 th, 1898, announces that "It is an urgent necessity to realize a reduction of soldiers and a curtailment of military expenditure. Repeatedly I warned Generals, Viceroys, and Governors to take positive action. Do not make excuses for neglecting your duty……. Perusing the successive reports from Wei Kuang-shou, Chang Ju-mei, and Wang Wen-shao I found that all of them stated they would need more time to fulfill their tasks because of some difficulties. Sometimes they insisted that there were no possibility to reduce the number of soldiers, and sometimes they realized so small a reduction that was almost negligible from our viewpoint. They did not repair the decadence of the officers, nor the fictitious number of soldiers. I was troubled and annoyed all day long, and drew a deep sigh……feeding useless soldiers, giving power to degenerated officers……"[6]

To have a new army, to modernize the equipment, it was necessary to dismiss old men and to deprive generals and officers of their gains from illegal exploitation. Was there really a reduction of soldiers? According to the reports in "Tê-tsung Shih-lu", the answer is yes. For example Shan-tung province reported on Apr. 1898, that they had reduced regular and volunteer forces by 30%, and that they were going to reduce the remaining soldiers by 20%.[7] In the same month, Honan province reported a 70% (!) reduction plan of the fixed number of soldiers.[8] Chih-li province also reported that the discharge of 7,247 officers and men was performed in the spring of 1899.[9]

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[4] "Tê-tsung Shih-lu," vol. 416, p. 3B. According to the report of Apr., 1898 from Kang-i who was specially despatched to central and southern China to investigate and to prohibit the exploitation by the official, "when the fixed number was five hundred, the real figure was almost always three hundred," that is three fifth of the military expenditure was regularly pilfered in the southern provinces.

[5] Ibid. vol. 411, p 14A-B (25, XI, 23K.).

[6] Ibid. vol. 414, p. 21A (30, I, 24K.).

V

Meanwhile, this reduction of soldiers stimulated the development of the Boxer movement in two ways. On the one hand, groups of unemployed and wandering ex-soldiers (Yu-yung 游勇 or San-yung 散勇) appeared as a factor of social unrest, and on the other it became an urgent necessity for the Ch'ing government to strengthen public peace through the re-establishment of Hsiang-tuan 郷団 (village militia) in the provinces.

"Chie-ping" or the "reduction of number of soldiers" was above all intended to do away with Kung-ê 空額 (fictitious members) and intermediate exploitation of revenue by governors and generals. But their interest was to dismiss real soldiers, espesially those of honest and upright spirit, who would not easily obey the orders of their corrupt superiors, leaving the nominal members untouched as a source of their illegal gains. Inevitably the number of soldiers residing in the provinces was actually reduced, with a consequent lowering of garrison and police power, whilst the country became infested with unemployed soldiers who were neither old nor weak but always desperate to make a living.

According to the decree issued on January 21, 1899, a year after the successive decrees on the reduction of soldiers, it was revealed that "In so many places, the hungry formed mobs and brigands caused trouble," and that "certain officials attribute these disturbances to the insufficiency of military forces resulting from the too speedy discharges. Even high officials in local government make this excuse."[10] There exists no doubt that conditions of general unrest furthered the development of the Boxer movement. The unemployed soldiers could not but join in secret associations or combine with groups of rascals to make their living, unless they were fortunate enough to be admitted into the newly organized Westernized army or into village militia units. In fact, They took the leading part in many disturbances that happened in 1898—9. Moreover, after the demobilization in 1896, weapons and ammunition were often sold secretly and illegally by corrupt officers, and this made the unrest worse and more dangerous.[11]

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[7] "Tê- tsung Shih-lu". vol. 416, p. 21B (28, III, 24K.).

[8] Ibid. vol. 416, p. 17B (26, III, 23K.).

[9] Ibid. vol, 444, p. 4B (2, V, 24K.).

[10] Ibid. 10/XII/24 (vol. 435, p. 14A).

The soldiers were joining the Boxers, too. "Ping-yuan Chuan-fei Chi-shih" 平原拳匪紀事 a record of the Ping-yuan incident, at Nov. 1899, wrtiten by Chang Chie 蔣諧, a magistrate of this prefecture at the time, tells us that the Boxers included Buddhist priests and Taoist monks, but "almost all of them were strangers, and many of them were Yu-yung (游勇 unemployed and prowling ex-soldiers) and therefore good fighters".[12]

Another influence stimulating the early development of the Boxers was the strengthening of the village militia by the Peking government. Of course it was not the first time that the farmers were urged to organize themselves into village units (Hsiang-tuan) to protect their property against robbers or to fight against aggressors to support the dynasty. Because the Chinese bureaucracy which was organized by civil officials selected through literary examination (Ko-chü 科挙) lacked the spiritual foundation for chivalry and fight the Chinese officials in dynasty times were almost always very poor fighters, the Chinese army was almost always weak and corrupt. And it was nesessary for the maintainance of public peace that the government raise fighting powers through levies and renumerations of these bodies; village militia organized by farmers, secret associations formed by monks, city proletalians, or scholars and their deciples. The White Lily society, a group of rebels in the Chia-ching period, and the Tai-ping rebellion in the Hsien-fêng age, were suppressed by militia who were not professional soldiers. So at the end of 1897, when the situation of Shan-tung province became critical following the German occupation of Chiao-chow, the re-establishment and strengthening of the village militia was insisted on repeatedly by certain high officials. For example, Hsü-tung 徐桐 in Dec. 1897, and Kang-yi 剛毅 in Apr. 1898, petitioned the Empress Dowager to "re-establish and combine village militias," and to "mobilize their forces for national defence." This was approved almost at once.[13]

Soon after, from the spring to the summer of 1898, the internal public peace was seriously disturbed by famines caused by the poor harvest in the preceding year, and by the general feeling of hostility against foreigners who were becoming more and more aggressive. Almost in every month anti-foreign and anti-Christian outbreaks were reported somewhere. Missionaries and converts were attacked and murdered, mission properties burned and destroyed.[14] Especially in southern provinces, not only the local brigands, hungry farmers and anti-foreign groups were making trouble, but also the revolutionary movement led by Sun Yat-sen was reported.[15] And because the local army and government forces were quite insufficient to suppress these "rebels", the militia was organized and their record was superior to that of the official army. As stated in a memorandum sent to the throne, "if there were any captives, these were brought in by the volunteers. Official soldiers always fell back although they laid claim to great merits in their fighting."[16]

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[11] "Tê-tsung Shih-lu," 16/XII/25 (vol. 457, p. 1B), 20/XII/25 (vol. 457, p. 1B). An officer, Niu Shih-han 牛師韓 who received three thousand guns and three hundred thousand bullets from the government arsenary to go to the front in 1895 died before leaving. And his son had sold a part of the arms for a large sum of money. His cousin, Niu Shih-shiu 牛師修 became the leader in the Wo-yan (窩陽) rebellion in Ang-hui as will be stated below. Ibid. 30/III/25 (vol. 441, p. 13A).

[12] Chiang Chie: "Ping-yüan Chüan-fei Chi-shih" (Ibid. "I-ho-tuan," vol. I, p. 356),

[13] Tê-tsung Shih-lu, 25/XI/23 (vol. 413, p. 15B), 14/III/24 (vol. 416, p. 2B).

Therefore, the government ordered on Sept. 5, 1898, that Kuang-tung and Kuang-si provinces establish militia units in every village within one month, and ordered the other provinces to do the same within three monthes. On November 5, 1898, the provinces were again urged to build up their militia, especially in Chih-li, Shan-tung, and Fên-tien provinces.[17] It was on the basis of this second decree that Steiger mistakenly concluded that the society or Tuan 団 of Boxers was organized under the influence and the supervision of the central goverment.

But as I stated above, Chang Ju-mei reported their existence in Shan-tung already in the summer of 1898.[18] So the Boxer movement was originally founded by the people themselves to protect their persons and property, and then Chang Ju-mei intended to induct the Boxers into the militia units which he was going to organize according to imperial decree. From September 1898 to the spring of the following year, provinces reported, one by one, the completion of a militia system to the throne. The report from Shan-tung province was received by the Empress in the autumn of 1898, and she appreciated that the officials and the gentry of this province transacted the business very well under Chang Ju-mei's leadership, and that they "did not betray my imperial trust."[19]

As Ichiko says, the village militia performed semi-governmental police service. On the other hand, the secret societies such as the White Lily, Big Swords and Boxers, were nothing but the object against which the service was maintained and directed. They They were two different kinds of organization with contrary purpose. Nevertheless, in the peculiar conditions of old China, it was quite possible that members of secret associations entered village units, and that those village units, including anti-dynastic elements, were mobilized for national defence or the maintainance of public peace.

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[14] H. B. Morse: "The international relations of the Chinese Empire", vol. III, p. 161--168.

[15] "Tê-tsung Shih-lu" 24/V/24, 10/VI/24, 19/VII/24 etc.

[16] Ibid., 19/VII/24 (vol. 424, p. 18A).

[17] Ibid., 20/VII/24 (vol. 424, p. 20A), 22/IX/24 (vol. 430, p. 8B).

[18] Ibid. 4/IV/24. A report by Lao Nai-hsüan dated 28/VI/25 (Kuang-hsü) reveals that I-ho-tuan activities in Kuan-hsien, Shan-tung was conspicuous already in the spring of 1898. And the same report also tells us about a Wang Mu 王牧, a magistrate of Wu-chiao 呉橋, who had an anonymous placard to summon the Boxers to "the 18th tuan (unit) of Tung-chan-fu 東昌第十八団" to hunt and condemn Chinese converts. Ibid. "I-ho-tuan" vol. IV, p. 460--462.

[19] "Tê-tsung Shih-lu" 12/X/24 (vol. 431, p. 12A).

The reason was that though the village militia was originally a function of village communities for self-defence, and thus a kind of brotherhood of the armed villagers, such closed unity of Chinese villagers had to be dissolved by constant interference from the central government which found it necessary to exterminate them for the security of the state. So eventually the former village conmunities changed into organs to serve the government of collecting taxes, arresting robbers, watching the villagers. Militia units developed into something of dull and obligatory character. In the later Ch'ing dynasty the personal militia service by the peasants was supplanted by the duty to pay special tax for the hiring of Hsiang-yung 郷勇 or "volunteers from villages". And yet some vestige of olden days remained, and the militia men were stronger and more able than the regular army.

And so in 1898 the provinces were urged to strengthen the Militia, and many Boxers including prowling ex-soldiers or Yu-yung were inducted into it. Liu Shu-tang 劉樹堂, the Governor of Ho-nan, opposed the idea of strengthening the militia in one of his memorandum sent to the throne in Dec. 1898, stating, "if unemployed soldiers should hear of the order to enlist the members of the units (Tuan-ting 团丁), they will probably try to join it and to stir up others."[20] Of course the Peking government reprimanded Liu and ordered him to do as he was instructed, but real conditions must have been what he feared. In the Pin Yüan incident, next year, when Chang Chie was about to suppress the boxers, a member of the sect arrived from Ch'i-nan and said in public that "half of the two regiments of the Left wing are members of Big Swords society. The governor (Yü Hsien 毓賢) supports us, so how can the magistrate (Chang Chie 蔣階) be against us?" The Big Swords were a secret association for antiforeign activities and had some connection with the Boxers as will be seen below. The influence of the Boxers and of the Big sword Society had penetrated into the provineial army of Shan-tung.[21]

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Thus the Boxers were accepted into the militia, and the militia men became leaders in the antiforeign movement. Meanwhile a decree issued on

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[20] "Tê-tsung Shih-lu" 15/IX/24, (vol. 433. p. 13A).

[21] Ibid. Lao Nai-hsüan "Chüan-fei Chi-shih" ("I-ho-tuan", vol. I, p. 355).

Nov. 19, 1898 reads as follows ; "Send telegram to Yu Lu 裕祿 : 'In the borderland of Chih-li and Shan-tung, Boxers are fighting with Christian converts, and the situation is going from bad to worse.' According to a telegram from Yu Lu in reply 'Yao Lo-chi 姚洛奇, a Boxer living in Kuang-ping 広平, together with brigands, quarrelled with native converts in the areas of Kuan-hsien 冠縣 and Wei-hsien 威縣. We have arrested and chastised him. But at present so many people are joining the society. If once they raised some slogan and started an outbreak, this cannot be easily subdued.' : Order Chang Ju-mei……to suppress them severely. Order Yu Lu to give any aid needed and not to neglect his duties."[22]

This decree shows a more cautious attitude of the Peking government than that shown in the decree of Apr. 1898. (p. 238) And this of course reflects a new situation on the Boxers' side. Yao Lo-chi began to combine "with brigands." Masses of peasants join them. Boxers were no longer a stationary and defensive group of villagers, doing pugilism training to protect themseles, but they became a consolidated body for antiforeign movement, sometimes actively attacking the converts, sometimes roaming about to avenge the strong-arm measures of foreigners and converts. But A. Smith, a missionary and author of "China in Convulsion" (1901), a book on the Boxers, who had been a resident in Pan-chüang, northern Shantung, living not far from Kuan-hsien 冠縣 and Wei-hsien 威縣, and who was also a correspondent in the province for the "North China Herald," did not report on Boxer activities in 1898 in his book above-cited nor in his correspondence. His statement about the Boxers started from the Ping-yüan incident in the next year. This does not mean that their activities were not yet conspicuous enough to arrouse his attention but that Smith's knowledge about them was not thorough enough. Sometime between the summer and the autumn of 1898, there must have been a turning point.

Of course the Empress shared the general feeling of the time, After the lease of Chiao-chow to Germany, Port Arthur to Russia, Kwang-chow-wan to France, and Kowloon and Wei-hai-wei to England, the attitude of the Peking government changed at last. In June 1898, the Kan-su army under Tung Fu-shiang 董福祥, the most reckless of Chinese armies at the time, was summoned from the western border to Chih-li province to guard the capital against foreign aggression. In July, men of this force attacked missionaries and destroyed churches at Pao-ting-fu on their way to Peking, and then caused troubles against foreigners at Marco Polo Bridge and Chien-men-wai, Peking, in September and October, of this year.[23] The removal of Tun's troops from the vicinity of Peking in nine days was demanded by the foreign envoys, and though the imperial ministers yielded to this demand their feeling of antipathy deepened and the actual removal of the troops was postponed.[24] The "hundred days" reform by Emperor Kuang-Hsü under the influece of K'ang Yu-wei had just collapsed on 22 Sept., 1898. Empress Dowager Tsu Hsi resumed the regency by imprisoning the young emperor and expelling or decapitating the reformers. The reform decrees were reversed. Tsu Hsi was neither more nor less anti-foreign than the reformers, but wished to return to the traditional methods of government. Any radical alterations were checked. The principles of conservatism and traditionalism were reasserted. And this anti-westernism helped the anti-foreignism to strengthen rapidly in the provinces.

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[22] Tê-tsung Shih-lu, 6/X/24, (vol. 431, p. 10A).

Moreover the concessions made in the spring of 1898 caused serious international strife everywhere. Especially Germans, engaged in the construction of the port of Tsingtao and surveying the inner area to investigate the possibilities for mining and railway enterprises aroused intense antipathy among the farmers, landlord, and gentry of Shan-tung province. At the end of 1899, three Germans prospecting on the way inland from Jih-chao 日照 in southern Shan-tung were attacked by a mob and narrowly escaped. At once the German authorities avenged this offence against their nationals by sending two hundred and fifty soldiers to burn two villages from which the mob had come. They also seized the town of Jih-chao to exact the punishment for the arrest and maltreatment of a German missionary there. Then they carried off, after holding the town for six weeks, five members of gentry to Tsingtao to secure the settlement of the case.[25]

On February 28, 1899 Italy demanded the lease of San-men Bay in eastern Chekiang as a coal supplying port, and the establishment of a "sphere of influence" in the neighbourhood. And when the demand was refused by the Ch'ing government on March 4, 1899, Italy sent an ultimatum to Peking and despatched war-ships to the Yellow sea for demonstration.[26] This was immediately after most German demands for the settlement of the Jih-chao incident had deen accepted. So the world expected China to make another submission, but she ignored the repeated demands and threats by Italy. And in October 1899, the Italian demonstration finished without effect.

I cannot go into the delicate circumstances which made Italy give up

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[23] On Tung Fu-shiang and Kan-su army see A. Smith "China in convulsion" Vol. I. p. 163, H. B. Morse: "The international relations." Vol. III, p. 151—3, and Tê-tsung Shih-lu 6/III/24, 6/V/24 etc.

[24] G. N. Steiger: "China and the Occidents" p. 123, 170.

[25] "Foreign relations of U. S." 1899, p. 154—178.

[26] H. B. Morse: Ibid "The international relations." vol. III, p. 124—5, 162—169, 175.

her demand. But Tsu Hsi's government showed an attitude of resolute resistance to the Italian aggression. It ordered the Viceroys and the Governors not to surrender to the foreigners even if threatened by war.[27] An instance may be mentioned (decree of Nov. 21st 1899). "Instruct the grand counsellors : the powers are looking with tiger eyes for a chance to penetrate into our country. In the present financial situation and with our armament it is hardly possible to start a war from our side. But there may be cases of emergency, in which we can do nothing but fight. If the strong enemy should invade our land and threaten us to yield a never acknowlegable demand, viceroys and governors of those provinces shall stand together and fight for victory. The word "peace", must not be mentioned, nor must it be thought. With the vast extent of our land, the richness of our products, and a population of many hundred million, what enemy do we have to fear if only we have the spirit of loyalty to the emperor and to the state ?"[28]

From 1898 to 1899, the attitude of the Chinese government to the foreign powers seems to have changed rapidly. On the other hand, on March 15 1899, a decree was issued to give official status to the missionaries. Bishops were assimilated to viceroys and governors, the lower ranks of the Catholic missionaries to lower Chinese officials. The bishops were to send lists of their subordinates to the local officials, and missionaries were not to intervene in cases before the courts.[29] The principle of traditional Chinese government, to be superior and neutral over all parties as the worldly agent of the "Heaven", was applied and the Empress desired to protect her state (and the Dynasty) not by driving the missionaries out of the country, but by absorbing Christianity into the Chinese body politic, and thereby depriving missionaries and their converts gradually of their extraterritorial status.[30]

At the same time, the Empress repeatedly ordered Yü Hsien 毓賢, who served as the governor of Shan-tung from April to December 1899, to watch and suppress the rebellious activities under his jurisdiction. And she ordered Yuan Shih-kai 袁世凱, who succeeded Yü Hsien as governor of Shantung after the Ping-yüan incident, and who was an able leader of a new Westernized army, not to suppress the people's movement by mere force, but to enforce obedience by taking account of their feelings.[31] As foreign envoys charged at the time, the Chinese government and its officials were lax in their measures against the anti-foreign movement. Yet the watchfulness of the Peking government increased gradually, because the situation in the provinces became more and more dangerous to foreigners, missionaries and converts, and also to the government and to the Dynasty itself.

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[27] Tê-tsnng Shih-lu 6/II/25, 8/IV/25, 18/IV/25, 6/V/25, 29/IX/25, 6/V/25, 9/X/25 etc.

[28] Ibid. 19/X/25 (vol. 453, p. 5A—B).

[29] H. B. Morse : Ibid. "The international relations", vol III, p. 160.

[30] H. B. Morse and H. F. MacNair : "Far Eastern international relations" 1931, p. 454.

[31] Orders to Yü Hsien, "Tê-tsung Shih-lu" 19/X/25, 26/X/25, and to Yuan Shih-kai, Ibid., 23/XI/25.

VII

The activities of Boxers in northern Shan-tung developed rapidly between 1898 and 1899. In April 1898, as stated above, Chang Ju-mei, the Governor of Shan-tung, felt it reasonable to induct the Boxers into village militia units and to make use of them as an instrument for local government and national defence, In November, 1898, Yao Lo-chi 姚洛奇, a Boxer leader was reported to have rallied a great number of "brigands," and the danger of their engaging in anti-dynastic activities began to be feared by the Peking government. In fact, in October 1898, they were no longer stationary and defensive groups for the pugilistic training of villagers, but moving, growing bodies of anti-foreign and anti-Christian conviction held together by threi belief in magical boxing and their hatred of foreigners and converts. Father Isorè wrote in his letter of Octaber 25 1898, that "at six o'clock in the morning I was informed of the uprising of the 'Ihonokien' (I-ho-chuan or I-ho-kien in Shantung dialect). The rebels have as their insignia a sort of turban and boots; their weapons are muskets or lances; their ensign, a yellow flag with black border, carrying the motto 'Obedience to the Tsing, Death to the Europeans' ......".[32]

In the Ping-yüan 平原 incident, of November 1899, the Boxers were led by Chu-hung-tung 朱紅燈 (Li Weng-cheng 李文成) and Pen-ming Hu-shiang 本明和尙 who pretended to be the descendants of the late Ming 明 emperors. Thousands of Boxers carrying red banners, muskets and swords with red emblems, fired two cannons and fought against the regular army.[33] Their attacks were directed no longer only against christians and converts, but also they robbed and despoiled the persons and property of landlords, gentry, and officials. The number of Boxers who banded together increased rapidly, and the number of bands which they formed also increased. Leaders, like Hu-shiang Wu-shiu 和尙武修, a monk, Chang Tê-cheng 張德成, a sailor, Tsao Fu-tien 曹福田, a gambler, Hoang-lien Sheng-mu 黄蓮聖母, the daughter of a grand-canal boat-man, emerged from the lower classes and joined the movement. Disturbances expanded from the south to the north, and by the end of 1899 they reached the outskirts of Peking and Tien-tsin.

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[32] In "Chine et Ceylan", a collection of letters from Jesuite fathers, cited by Steiger in "China and the Occidents", p. 132.

[33] Chan Chie; Ibid. P. C. C. S.

The domestic and the international situation acceleratively bred a general unrest and hostility against foreigners. But there was a third factor which stimulated the movement to develop more rapidly after the autumn of 1898. That was the economic condition in northern China; above all, poor harvests and famines in Kiang-su, An-hui, Shan-tung and Ho-nan in 1897, 1898, 1899, and abnormally dry weather in Chih-li in 1899 and 1900.

Of course sudden changes in the economic condition as the opening of Tsing-tao as a free port, and the influx of foreign capital and merchandise into the interior also affected the living standard of farmers of Shantung. For example, A. Smith who was a resident of the province at that time describes the result of German economic invasion as follows;

1 Appearance of a new kind of foreigners, i. e. "promoters," whose interests and behavior differ from those of old type foreign residents, who had been government officials, merchants, and missionaries. Rapid increase of their influence accompanied by capital inflow.

2 Unemployment caused in the native labour market by imports of machine-made goods such as cotton yarns, matches, and kerosene, and by the construction of railways and progress in inland water navigation. The lack of elasticity in the local labour market made the situations still more unbearable.

3 The increasingly evil influence of opium smoking and opium trade, which penetrated the interior through the increase of import and the beginning of opium poppy cultivation in Shan-tung.[34]

Regarding (1), The subsidiary treaty on conmmerce between China and Japan sighned at Peking on July 21, 1896, embodied the Japanese right to carry on trade, industry, and manufacture at any of the treaty ports, and this was at once shared in by all treaty nations through the "most favoured nation clause". So as soon as Chiao-chow was occupied, and a German sphere of influenee was established in Shan-tung, German capital began to flow into the interior seeking coal, iron, gold-mining, and railway concession. The "promoters" entered a land where "nobody knows and cares anything about 'progress'" (A. Smith).[35] They built up roads, factories, and railways, utterly ignoring Chinese respect for "Feng-sui" 風水 (geomancy). They bought compulsorily or made the Chinese government purchase farmlands at cheap prices sometimes selling them again at a profit.[36] Hostility against the foreigners was thus aroused by those capitalists and their agents. Of course the German investments in Shan-tung, as those of the Russians in Manchuria, did some good to the persants of Shan-tung. Masses of landless or poor peasants from the interior of the province, from Shanghai and other southern ports, gathered in Tsingtao seeking high wages.[37] Nevertheless the scale of foreign investment was not so big as to settle the problem of poverty among Chinese farmers. On the contrary, as we shall see below, the population movement from south to north, partly because of the famine in Kiang-su in 1897 and 1898, stipulated the development of disturbances in Shantung.

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[34] A. H. Smith; "China in Convulsion", vol. I, p. 88—101

[35] A. H. Smith: Ibid. p. 89

Regarding (2), the railway that had been built in North China before 1899 were only two short lines (i) from Tan-shan 唐山 to Tien-tsin 天津, and (ii) from Peking to Chêng-ting 正定. Inland water navigation, to which the right was given to foreigners in 1898, had hardly anything to do with the Boxers because there was no river in north China which allowed foreign steamship navigation except Pai-ho 白河 connecting Tien-tsin with the Yellow sea. But imports of machine-made foreign goods, especially of cotton yarns and of petroleum, rapidly increased before 1899 (Table I, II), and affected the peasants' living as Smith said, "in some villages every family has one or more looms, and much of the work is done in underground cellars, where the click of the shuttle is heard month in and month out from the middle of the first moon till the closing day of the twelfth. But now the looms are idle and the weaving cellars are falling in the ruins.……Many of the innumerable sufferers from this steady advance of 'civilization' into the interior of China have no more appreciation of the causes of their calamity……. Yet there are many others who know perfectly well that before the foreign trade came in to disturb the ancient order of things, there was in ordinary years enough to eat and to wear, whereas now there is a scarcity in every direction, with a prospect of worse to come. With an experience like this, in many different lines of activity, the Chinese are not to be blamed for feeling a profound dissatisfaction with the new order of things."[38]

The foreign trade in northern ports were showing a big growth between 1897 and 1899. Imports and exports to and from Tien-tsin, Chefoo, and Newchwang increased rapidly, but at different rates of increase. In Chefoo and Tien-tsin, the growth of imports was far more rapid than that of exports, and a balance of payments was maintained by a heavy out-

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[36] Many troubles occured concerning the lands in Tsingtao and Tientsin and also about the church properties in interior. "Tê-tsung Shih-lu" 6/IX/24, Chinese Maritime Custom; Decennial Report 1892—1901, 1904, vol. I, p. 91, Lord Beresford: "The Break-up of China." 1899, p. 59, p. 77.

[37] Chinese Maritime Custom; "Decennial Report 1892—1901", vol. I, p. 57, p. 100

[38] A. H. Smith: Ibid. "China in convulsion", p. 90—91

Table I
Foreign Trade in northern ports 1894—1899
(1,000 H. K. Taels)

	Tientsin		Chefoo		Newchwang	
	Imp.	Exp.	Imp.	Exp.	Imp.	Exp.
1894	4,551	6,605	1,684	632	864	1,534
1895	5,367	8,919	2,150	776	—	—
1896	6,651	8,776	3,119	1,119	1,886	3,555
1897	9,169	10,192	3,685	1,388	1,641	5,547
1898	9,110	10,277	6,283	1,720	1,453	7,181
1899	14,255	10,871	6,539	2,075	5,279	8,691

ward drains of gold and silver. In Newchwan, a Manchurian port, imports could not catch up with exports, which increased greatly by the entrance of Japan as a buyer of beans and beancakes.

Table II
Import of cotton yarn and petroleum to China
1894—1899 (1,000 H. K. Taels)

	Cotton Yarn	Petroleum
1894	21,299	8,005
1895	21,104	6,615
1896	31,835	9,083
1897	34,272	13,299
1898	39,048	11,914
1899	54,607	13,011

Academia Sinica : Ibid., p. 46

The great increase in imports to Chefoo and Tientsin was due to imports of cotton yarn and petroleum. Japanese cotton yarn found a big market in north and north-eastern China after the Sino-Japanese War, and rapidly replaced Indian and British goods in the provinces by lower prices, easier transportation, and its suitability to native weaving machines.[39]

A silver influx was recorded in Tsingtao as a result of German investments, but in Chefoo and Tientsin a net outflow took place, and the silver stock in the interior seemed to have gradually diminished (Table III).

Regarding (3); the quantity of foreign and native opium imported

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[39] Maritime Custom : "Dec. Rep." 1892—190 vol. I, p. 49—50

Table III
Import and export of Silver via Maritime Custom
1895—1899 (1,000 HK. Taels)

	Chefoo		Tsingtao	
	Imp.	Exp.	Imp.	Exp.
1895	2,440	2,630	0	0
1896	1,440	5,643	0	0
1897	2,420	5,763	0	0
1898	3,495	6,679	134	—
1899	5,379	8,313	622	173

(Decennial Report, 1892—1901, Vol. I, p. 56, p. 92)

through Tsingtao in 1898 and 1899 was very small,[40] but its import via Chefoo was showing a big increase in the same period (Table IV). The

Table IV
Foreign opium import via Chefoo 1896—1899

	Quantity (Piculs)	Value (1,000 H.K. Taels)
1896	355.	209.
1897	319.	202.
1898	497.	333.
1899	1,413.	928.

(Dec. Rep. Ibid. Vol. I, p. 54)

import of opium into Chefoo increased more than four times both in quantity and value by comparison to that of 1897. But even this rapid increase could not meet the rapidly increasing demand for cheaper and coarser kinds of opium. Therefore, the cultivation of poppies expanded rapidly all over Shan-tung, especially in the western prefectures of Chi-ning 済寧, Tsao-chow 曹州, and Yen-chow 兗州.[41] It is interesting to note that these centers of opium cultivation coincide with the regions where activities by Big Swords and Boxers were repeatedly reported. Opium cultivation decreases the acreage for food crops, and so reduces the self-sufficency of farmers. Also opium production and trade always tend to invite an influx of smugglers, gamblers, and adventurous ex-soldiers.[42]

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[40] Ibid. vol. I, p. 98

[41] Ibid. vol. I, p. 54—55

[42] Chi-ning, Tsao-chow, and Yen-chow were situated along the grand canal which connect Chihli and Shan-tung with the Yang-tse provinces, and originally served as a main route of transportation of tribute rice to Peking. But since the steamship navigation began to transport the rice from Shanghai to Tientsin by sea, so many boatmen lost their jobs. As A. Smith adduced, there were so many boatmen mixed among Boxers, but their unemployments were not, as he assumed, solely caused by the introduction of railway and inland water steamship transportation. See "Chin-shi-kao" 清史稿, Shi-huo 3, 食貨三, Tsao-yun 漕運. And also Sakai Tadao: "Gendai Chugoku no himitzu-Kessha ni tsuite" (included in "Kindai Chugoku kenkyu" by Kindai Chugoku-kenkyu Tokubetsu-iinkai, 1949, Tokyo) p. 148

So there is no doubt that every item mentioned by Arthur Smith as the result of foreign economic invasion had an impoverishing and disturbing effect on the situation in North China in 1898—1899. But this does not suffice to explain why the development of the Boxers suddenly increased after the autumn of 1898. From this viewpoint, the famines of 1897—1899, and the growth of the hungry and wandering masses and their movement northward to Chih-li had perhaps far more important and direct influence.

VIII

In the spring of 1897, there was a heavy drought in northern Kiang-su 江蘇, especially in the Hsü-chow 徐州, Hai-chow 海州, Fêng-yang 鳳陽, and Huai-in 淮陰 districts, regions directly contiguous to Shan-tung. The germination and the growth of wheat and barley were hindered, and a very poor harvest followed. In the summer of the same year, prolonged rains caused floods at Sha-wo-ho 沙窩河 and at Huai-ho 淮河, and the rice crop, too, diminished sharply.[43] So at the beginning of December 1897, already, a great many vagabonds tried to enter the southern provinces across the Yangtze from Koa-chow 瓜州, and when refused entry by the local officials, turned into a mob and attacked the yamens.[44] By the spring of 1898, the numbers of vagabonds had rapidly increased. A hundred thousand hungry people moved about from place to place, crying for food. In the summer of this year, the river Huai-ho repeatedly flooded eastern An-hui 安徽 and northern Kiang-su. More than five million refugees were reported to have left these districts.[45] Therefore, when the existence of Boxers was first reported in northern Shan-tung the Peking government feared that they might combine with the hungry refugees in Kiang-su.

In 1898, a big flood of the Yellow River occured. The Yellow River had overflowed at Tung-wa-hsiang 銅瓦廂 in Honan in 1855, and began to take its present northern course. After this overflowing and the change of its course, the repairing of dykes was left to villagers along the river, because the government was busy suppressing the Taiping rebellion. As a result, the engineering lacked any consolidated plan, and the width of the river at Ch'i-nan 済南 was made too narrow to admid the running water. Since then the Yellow River has flooded almost yearly and become indeed the sorrow of the farmers of Shan-tung.[46] In August, 1898, the river overflowed the four breaches on either side in the neighbourhood of Tung-a 東阿, and the flood covered almost all the Shan-tung plain. The submerged area on the south coast was 2,600 square miles, while that on the north side was estimated to be larger than that.[47] The collection of land-tax and rice tribute was postponed or cancelled. Relief activities by local governments were urged by imperial decrees. But the growth of wandering groups of hungry peasants, noted already at the beginning of October, became more and more serious in the course of the winter. The mob passed through the western part ot Shan-tung, together with the vagabonds from northern Kiang-su, and marched towards Honan province. But in Honan, too, roaming peasants were rapidly increasing, owing to the bad crop of the previous season.[48] In Peking, 1898 was the year of the hundred days' reform by Emperor Kuang-hsü, and of Empress Dowager Tsu Hsi's coup d'etat against the reformers. While they fought and struggled with each other for the supremacy at court, the situation in Kiang-su, An-hui, Shan-tung and Ho-nan went from bad to worse.

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[43] "Tê-tsung Shih-lu" 23/VII/23 (vol. 407, p. 18B), 22/IX/23 (vol. 410, p. 12B), 28/X/23 (vol. 411, p. 18B).

[44] Ibid, 16/XI/23 (vol. 411, p. 8B).

[45] "Tê-tsung Shih-lu," 12/III/24 (vol. 417, p. 7A), 3/VI/24 (vol. 421, p. 3B).

Meanwhile, from November 1898 to February 1899, two disturbances broke out in eastern Shan-tung and northern An-hui, which must be touched upon to make clear the sequence of events which led to the Boxers' uprising. One was the Jih-chao 日照 incident in Shan-tung, and the other the Wo-yang 窩陽 rebellion in An-hui. Both of them resulted directly from the political and economic situaton described above, and both determined the form and progress of Boxers' rebellion.

The Jih-chao incident was one of the anti-foreign and anti-christian uprisings that were constantly reported all over China between 1897 and 1899. It is important for our purpose because it occurred in Shan-tung province, and because there must have been some intimate connection between it and the Boxer movement. On November 8, 1898, three American missionaries from I-chow-fu 沂州府, traveling to Chu-chow 諸州, suddenly found themselves in the center of desturbances which had already broken into violence. They reported repeated attacks against Christian converts and missionary property by farmers from the villages in Jih-chao county. As the report stated the names of the villages, dates of the attacks, and designated the persons who were the principal ringleaders, the American envoy demanded in February 1899 that the Peking government arrest and punish these ringleaders.[49] The government ordered the

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[46] "Ching-shih-kao", Ho-chü-chih I, 清史稿, 河渠志一, p. 17A, Ibid, III, p. 14B, Ibid, IV, p. 6A.

[47] "Dec. Rep." vol. I, p. 60—61; "Tê-tsung Shih-lu", 6/VII/24 (vol. 423, p. 7A). 16/VII/24 (vol. 424, p. 13A).

[48] Ibid. 21/XI/24 (vol. 434, p. 9B). 8/XII/24 (vol. 435, p. 10B).

[49] "Foreign relations of U. S." 1899, p. 154—178, and above all, No. 142, incl. 1, incl. 6, incl. 9.

Governor of Shan-tung to issue proclamations to persuade the people to stop the hostilities and to be friendly to the foreigners. But the attitude of the government was fundamentally neutral. The proclamations said repeatedly that "her treatment of foreigners and of Chinese is the same."[50] And while no steps were taken to suppress the unrest by force, or to settle the quarrels between churches and farmers which arose constantly over some piece of land, the trouble continued to spread, bands of armed "ruffians" swarmed in, and the villagers armed themselves with medieval weapons.

At last, because a German missionary was attacked in November 1898, and because of attacks on three German engineers in the spring of 1899, Germany sent the troops, burned two villages from which the mob had come, occupied the town of Jih-chao for six weeks, and carried off, at the end of May, five members of gentry as hostage to Tsingtao to secure the settlement of the case. Their claims were honoured and the case was settled.[51]

The Wo-yang rebellion was staged by "Tu-fei" 土匪 (local brigands), according to the "Tê-tsung Shih-lu." Niu Shi-shiu 牛師修, the chief of the rebels, was a cousin of Niu Shih-han 牛師韓, an army officer who died and whose supplies of ammunition had thus fallen into the hands of the revels. In December 1899, Niu Shih-shiu rallied the hungry people and rose in rebellion.

The general unrest and increase of vagabondage favoured uprising. The rebels established a stronghold at Mt. Shih-kung 石弓山, and attacked and plundered towns and villages. The Peking government ordered Yu Chang 裕長, the Governor of Honan, Tung Hua-hsi 東華熙, the Governor of An-hui, and Liu Kun-i 劉坤一, the Viceroy of Liang-chian 両江, to cooperate in surrounding the rebels, and at the end of February 1899, they were suppressed completely.[52]

These two regional uprisings were suppressed, but their motives and intentions were bequeathed to the Boxers who succeeded them. By occupying and holding the town by force, taking members of gentry as hostages, expelling inhabitants, burning villages, and imposing heavy reparations on the people of Jih-chao, the Germans could suppress the anti-German activities only apparently. The hatred and the hostility of the people agaist them actually became fiecer, deeper and more relentless. If, as reported by Arthur Smith and others, the Big Sword society led the movement, the sectaries would have fled from southern Shan-tung, and sought another chance for revenge against the foreigners. The distinction between Ta-tao-hui 大刀会 or Big Swords and Boxers is clearly stated in no sources. Perhaps we can assume that they were secret societies, with a similar purpose and with overlapping membership.

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[50] Ibid. "For. rel." 1899, p. 158.

[51] Morse and MacNair: "Far Eastern international relations", p. 457.

[52] "Tê-tsung Shih-lu", 3/XII/24, 6/XII/24, 10/XII/24, 11/XII/24, 14/XII/24, 18/XII/24, 20/XII/24, (vol. 435, p. 4A, 5B, 7B, BA, 14B, 15B, 21A; vol. 436, p. 3B, 7A, 16B).

The Wo-yang rebellion was subdued forcibly, the ringleaders put to death, the fortresses destroyed. But the economic situation which gave rise to the rebellion, was not improved. An imperial decree antedating the suppression of the rising reads as follows. "In the border region of An-hui and Ho-nan, there have been famines year after year. Among the rebel there must be those, who being on the verge of starvation, stole food, feared arrest, and joined the gangs. Of course we should not be lenient toward the law-breakers, but we feel pity toward 'foolish people,' ......".[53] Destruction by the rebel, must have made the situation in the district more terrible still. The population of the area moved north along the grand canal, and inevitably helped the growth of Boxers.

These may be considered as the reasons why the Boxer movement developed suddenly between the autumn of 1898 and the spring of 1899.

After the summer of 1899, the disturbances spread rapidly to Chih-li 直隷. North China, afflicted with flood in 1898, suffered from drought in 1899. In Shan-tung, the heavy drought was accompanied by locust damages.[54] In Ho-nan, the lack of rain made it impossible to sow wheat. In Peking, the Emperor Kuang-hsü repeatedly entered the Takao-tien 大高殿 to pray the Heaven for rain, but from April to November 1899, not a single drop of rain fell on Chih-li province.[55] Famines and mobs of vagabonds spread from south to north.

Famine inevitablly raised the price of foods. The decline in the value of silver since the abolition of Bimetalism in western countries continued. The salaries of Manchu soldiers or bannermen 八旗甲兵 were paid 80% in silver and 20% in rice. So the sudden rise in the price of rice, and the constant diminution of the purchasing power of silver pressed down their standard of living. Poverty, dissatisfaction, and unrest advanced from countryside into the city. Rumours were spread intentionally to attribute the responsibility for the drought and famine to foreigners, foreign mechanisms, and to the christian faith. Railways, telegraphs, medicines and even eye-glasses were thought to be something accursed and harmful to the orderly and peaceful processes of social life. Belief in spiritual Boxing spread. The followers of the sect increased. And the Chinese government, the fundamental theory of which was to act as the agent of the Heven, had to respond to the people in a manner that the people liked, and was therefore unable to resist the current of the time.

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[53] Ibid. 11/XII/24 (vol. 435, p. 15B).

[54] Ibid. 21/XI/25.

[55] "Tê-tung Shih-lu," 11/IV/25, 2/IX, 4/IX/, 6/IX, 20/IX, 9/XI.

THE BASIC IDEA OF FISCAL SCIENCE

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I. *Object of This Treatise*

This is a methodological study concerning the basic idea of fiscal science. It is generally believed that the science of public finance is a discipline which treats of the economy of the state and other public authorities. Contrary to this popular notion, I should like to assert that fiscal science should have the economy of compulsory acquisition as its basic idea. This view was first expounded more than twenty years ago in my work, written in Japanese, *Principles of Fiscal Science*, Tokyo, 1931, which was devoted, among other subjects, to the relationship between the science of public finance and the philosophy of knowledge. Since that time I have asserted the same idea slightly revised in the following monographs in Japanese: *Public Finance in Planned Economy*, Tokyo, 1933; *Theories on the Principles of Taxation in Fiscal Literature*, Tokyo, 1935; and *Elements of Fiscal Science*, Tokyo, 1943. Here I shall explain in English what I have set forth in these works.[1]

Not only in fiscal science but in all historical-cultural sciences in general, it is hardly possible to determine whether or not an idea is adequate as a basis of any science, unless there is a reliable criterion. What then should be the criterion? A school of thought may say, "What has been dealt with in most of the works on public finance constitutes fiscal problems in some sense," and insist that this is the very criterion needed. But a careful perusal of the books on public finance reveals that miscellaneous problems are treated from various points of view, not infrequently without order and system which strict logic demands. For example, in the chapters on taxes, the general theories of taxation and the tax systems of some countries are explained. In the chapters on government enterprise, we find fiscal analysis on industry, trade, transportation, etc., but some go so far as to interest themselves in the principle of management, whether railways should be put under government or private operation. Again in the chapters on public expenditure, besides explanation of its size and items, discussions on public administration are very often set forth, arguing, among other things, that the budgetary amount of expenditure for education or social security is too large or too small; in some cases they even include a detailed explanation of the pension system, etc., etc. Should all these be proper subjects of fiscal science? If this be true, it would be something in the nature of an encyclopaedia. Needless to say, fiscal science is not an encyclopaedia. It is a special discipline with its own scope and subject of study.

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[1] This study is founded on the methodology of the neo-Kantian philosophy, and I have derived valuable suggestions from studies of this school, especially from the following: Heinrich Rickert, *Die Grenzen der naturwissenschaftlichen Begriffsbildung*, 4th ed., Tübingen, 1921; idem, *Kulturwissenschaft und Naturwissenschaft*, 5th ed., Tübingen, 1921; Kiichiro Soda, *Geld und Wert*, Tübingen, 1909; idem, *Die logische Natur der Wirtschaftsgesetze*, Stuttgart, 1911 (Tübinger Staatswissenschaftliche Abhandlung, 17. Heft, ed. by C. J. Fuchs); idem, *Problems of Economic Philosophy*, Tokyo, 1917 (in Japanese); idem, The *Cultural Value and the Marginal Concept*, Tokyo, 1922 (in Japanese).

Now, the question boils down to what is to be interpreted as an essentially fiscal phenomenon. Contending that what has commonly been dealt with in the popular works on public finance should de subjects of fiscal science is nothing more than a tautology. For those who maintain such an opinion, it is absolutely necessary to demonstrate why such a position is justifiable from a logical standpoint. Unlike in the case of jurisprudence, economics and sociology, methodological studies of this kind are lacking in fiscal science. It is, therefore, all the more necessary to take up such studies.[2]

The basic idea of fiscal science is an a priori or guiding concept pertaining to all fiscal activities. And it is certainly this concept that makes public finance a science in the real sense. Logically speaking, such a concept should be compatible with the following criteria:

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[2] This is in fact one of the problems standing on the border line between fiscal science and philosophy. It is a subject of fiscal philosophy, and what is treated in this essay, constitutes, as it were, a point of departure of fiscal studies.

What should be a subject matter of fiscal philosophy still remains to be discussed among scholars concerned. Setting aside this question, the word "fiscal philosophy" itself has seldom been used. Wilhelm Andreae, on page 1 in the preface of his *Grundlegung einer neuen Staatswirtschaftslehre*, Jena, 1930, used the term "Finanzphilosophie" and this with a note "sit venia verbo!" This is the first instance of this term I have ever seen in Western literature. But there have been some expressions similar to fiscal philosophy. M. Édélstand du Méril, for example, published a work in two volumes under the title "*Philosophie du Budget*," Paris, 1835-36. In this book, the author made a noteworthy study of national expenditures. Weston and others introduced the term "philosophy of taxation" in the following: S. F. Weston, *Principles of Justice in Taxation*, N. Y., 1903, pp. 39, 42, 48, 98, 105; Alfred Marshall, "National Taxation After the War," p. 317 (in *After-War Problems*, ed. by Dawson, London, 1917). Recently Harold M. Groves used the term "budget philosophy" in his *Financing Government*, 3rd ed., N. Y., 1950, p. 546, and "philosophy of taxation" too in the subtitle of another of his work, *Trouble Spots in Taxation, Essays in the Philosophy of Taxation and Other Public Finance Problems*, Princeton, 1948. It may also be noted that H. G. Moulton entitled his study, *The New Philosophy of Public Debt*, Washington, D. C., 1943. These are a very few instances I have seen in Western literature. However, it must be pointed out that these terms practically mean the general theories or principles on budget, taxation and public debt, but not at all philosophy in our sense. After all, such expressions as fiscal philosophy and the like are not in wide use. And this clearly indicates that studies along this line have not yet been developed as they should.

1. It should show characteristics by which fiscal phenomena can be distinguished from other social phenomena. In other words, it should be of a nature that without it public finance as such cannot exist, and it should constitute the basis of all fiscal phenomena always and in all places.

2. It should be, among other features, of historical reality, insofar as fiscal science is a kind of historical-cultural science.

What then is the idea compatible with these postulates? I wish to expound at first my own view and then to comment on what has been advocated by others.

II. *Basic Idea of Fiscal Science and Its Empirical Forms*

The basic idea of fiscal science, or the fundamental concept of public finance, is, in my opinion, the economy of compulsory acquisition.

Public finance is part of the economy in the wide sense of the term. As for the meaning of "economy," opinions differ widely among economists. But here I refrain from examining them in detail, and simply state my view that "economy" consists in activities and organization to acquire the material means of satisfying human desires. In giving a formal definition of economy, some authors include in the concept "economy" activities themselves to satisfy human desires. Irrespective of formal definitions, however, the central idea upon which discussions and explanations are based, is in most cases concerned with the supply of the means to satisfy human desires. In other words, economists entertain divers concepts of economy which vary more or less, but agree in the fact that the nucleus of economy is, after all, the acquisition of the necessary means for human life.

Public finance is the economy of compulsory acquisition, and as such is a specie of economy. If the word economy is understood as in the preceding paragraph, it may appear unnecessary to say "economy of compulsory acquisition," but simply "compulsory economy." In using the term "economy of acquisition" I wish to stress the acquisition of means.

Public finance is not a free economy which is carried out in compliance with the free will of the parties concerned as may often be seen in private economy at present, but it is a special kind of economy which is controlled in accordance with unilateral will, irrespective of the will of the other party concerned. In short, public finance is the economy of acquisition by compulsory measures.

Where in the empirical world nowadays does such economy of compulsory acquisition present itself in the most clear-cut form? The answer is in the revenue economy of the state and other public authorities. This is the reason why the revenue of central and local governments is believed to be the subject matter of fiscal science according to the prevailing theory. In my opinion, however, phenomena embodying this idea, can be found not only in the economy of governing bodies, but also in other branches of our economy as well. If this be true, the treatment of these fields too must logically fall within the province of fiscal science. For instance, those activities of organization which have, practically or legally, a monopoly in the production or supply of necessaries of life are phenomena of fiscal significance and constitute problems of fiscal science. Even in the case of those orgnizations which are established in accordance with the free will or the members of which are free to join or recede at their own will, if there exists something compulsoly in their acquisitive economy, they also must come under the scope of fiscal science. A good example of this compulsory economy is the economy of the medieval religious societies in Europe. In the medieval age, when the church often exercised the same or greater authority than the worldly state, and its economy of acquisition was largely of a compulsory nature, its activities would be a subject matter of our science. It is simply a secondary issue whether compulsory power originates from custom and other psychological and physiological desires, or from law and government authority, no matter whether it derives force from the will of the majority of the people or the single will of the dictator. What is of primary importance is whether or not the economy at issue is one of compulsory acquisition.[3]

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[3] Many scholars have admitted, expressly or tacitly, that the basic concept of fiscal science must be sought in the compulsory nature of the economy in question. For instance, the French fiscal economist, Gaston Jèze, points out as essentials of fiscal phonomena the following three conditions: 1) monopoly, 2) compulsion and 3) political or social considerations. Upon these, Jèze asserts, rests the autonomy of fiscal science (Gaston Jèze, *Cours de Finances Publiques*, Paris, 1926, p. 23). Strictly speaking, however, it can be said that there are two, i. e. positve and negative aspects about compulsion, which present themselves in forms of command and prohibition, and monopoly is a sort of prohibition, which is comprehended by the wider concept of compulsion. Political considerations are also included in the concept of compulsion. As for social considerations, they are common to all other social sciences, not only to the science of public finance. Suffice it to point out compulsion as the main feature of public finance.

Wilhelm Gerloff, in his outstanding study, "Grundlegung der Finanzwissenschft," in *Handbuch der Finanzwissenschaft*, 1. Bd., 1st ed., Tübingen, 1926, distinguishes the object of fiscal science in the wide sense or Erfahrungsobjekt, from that in the narrow sense or Erkenntnisobjekt, and seeks the characteristic of fiscal science in the fact that public economy differs from private economy in the method of obtaining the means of living. He says, "Im engeren Sinne kann man daher als Objekt der Finanzwissenschaft (Erkenntnisobjekt) die öffentlichwirtschaftliche Beschaffung und Bereitstellung der einer öffentlichen Wirtschaft zur Erfüllung ihrer Zwecke erforderlichen Mittel bezeichnen" (ibid., p. 9). And he points out, "Die Anwendung von Zwang ist charakteristisch" (ibid., p. 32). In the second edition of this work published in 1950, there is no alteration in his opinion (cf. pp. 17, 43). But we must observe that Gerloff's view, though full of suggestion, does not differ much from the prevailing theories in that it confines the "Erfahrungsobjekt" of fiscal science to public economy alone and compulsion (as an essential feature of public finance) to that which derives from government authority.

III. *Public Economy and Fiscal Science*

The science of public finance cannot be considered an autonomous discipline simply because it concerns itself with the economy of the state. On the contrary, the economy of the state becomes a subject matter of this science because that economy involves much of the element of compulsory acquisition. The traditional idea that public finance is the economy of the state and local authorities, logically speaking, reverses this relationship. Should the same or similar principles as, for instance, the principle of free exchange, prevail in both public and private economies, there could be no room for fiscal science to assert itself as autonomous learning independent from pure economics. If, on the other hand, there exist some activities and organizations which carry on the economy of compulsory acquisition in the same manner as the central and local governments, they as well as these public bodies should be put under consideration in fiscal science.

The autonomy of fiscal science is not based on the fact that it deals with the economy of the government but on the grounds that its fundamental concept is the economy of compulsory acquisition. There can be no doubt that, historically speaking, the typical form of the economy of compulsory acquisition first originated from and flourished in such compulsory organizations as the state and local authorities. In fact, however, there are some other economic activities which involve much of compulsion in the form of "determination by the unilateral will," e. g. the economy of the church in the medieval age, the economy of such bodies as chambers of commerce and industry and the revenue economy of monopolistic suppliers of daily necessaries of life at present. In principle, there is a good deal in common in the collection of the church tax and that of the national tax, as there is in the determintion of the prices of monopoly goods and the imposition of the consumption tax. All these aspects of compulsory acquisition naturally require special and integral treatment in our science. It is inevitable, however, that, depending upon the actual structure of economic society, the scope and area of application of the principles concerning the economy of compulsory acquisition vary according to time and place. The scope of application of such principles may be the smallest in economic societies where individual absolutism prevails as, for instance, in the community of anarchism. In a liberalistic society, it may be larger than in an anarchistic society but far smaller than in a society of controlled economy. It is in the economic life where social absolutism, such as Plato's in *Politeia*, predominates, that the principle of compulsory acquisition is applied in its full vigour.

It is admitted that as free economy gradually gives way to controlled economy in our economic life, the field of application of the principles of fiscal science will grow wider in contrast to the contraction of the sphere of application of the principles of free exchange economy. For instance, the strengthening of price control by the government and the compulsory regimentation of consumption can be construed as enlarged application to the national economy of the principles of fiscal science.

IV. *Basic Idea of Science and Empirical Reality*

For the autonomy of th science of public finance, it must needs have as its basic idea the economy of compulsory acquisition. Fiscal aspects of empirical reality, i. e. only the aspects which relate to this idea constitute the subject matter of fiscal science.

Generally speaking, the empirical reality as such is an object neither of fiscal nor of any other science. It has a variety of aspects which have to be studied by several kinds of science. Take for instance a desk. It has divers aspects which are to be dealt with by various branches of learning. For example, its price is a problem of pure economics; as a commodity of trade it is an object of the study of merchandise; its manufacturing process is a matter of engineering technique; and if any tax is imposed on it as a means of internal revenue, this aspect is treated by fiscal science. Almost the same can be said of all other phenomena. In trying to determine the subject matter of any science, therefore, we can not take up an empirical reality as such, because its manifestations are divers and complex. It is not empirical reality itself that determines whether or not it is an object of any science. On the contrary, we must first be clear about the basic and central idea of any science and then the scope or object of study is fixed by selecting the particular aspect of that reality which relates to this basic and central concept.

Taxes, for instance, at first glance appear to be a subject matter related only to fiscal science, but as an empirical reality, some aspects concern other than the fiscal science. To take an illustration, as the tax system often has close relations with the nation's economic life, taxes must in this sense be studied by pure economics. On the other hand, as taxes have bearings upon the profit and loss account and the cost calculation in business enterprises, this aspect constitutes one of the main themes of the science of business management and accounting. The excise on alcoholic drinks and tobacco exercises an influence not only on the consumption of those goods but also on the nation's health, and so it is one of the subject matters of hygiene. As the tax on the celibate, as levied in Italy during the reign of fascism, affects the population of a country, it is a problem related to the theory on population. Furthermore, as some taxes are closely connected with the distribution of wealth, they have aspects which interest us with respect to social policy, and so forth. Thus the social phenomenon which we call taxation has divers aspects which have to do with various disciplines. But the reason why taxes are usually regarded as one of the main subjects of fiscal science, is the fact that the fiscal aspect presents itself most prominently.

In starting a scientific study, therefore, it is essential to set up a basic and central idea indigenous to that science. In the case of fiscal science, such a concept is the economy of compulsory acquisition. With this as a guiding idea, we select from empirical realities fiscal aspects and make them object of study. In the empirical realities themselves, there exists nothing fiscal.

To sum up, the science of public finance studies those aspects which are related only to the economy of compulsory acquisition.

Now what do the words "related to the economy of compulsory acquisition" mean? And what are such phenomena? There are many such phenomena, but most of them are divided into the following three categories:

1. Those phenomena the fiscal aspect of which constitutes their primary cultural significance. For instance, those which are created or used deliberately for fiscal ends. Quoting Max Weber's terminology, these may be called fiscal phenomena in the "narrow sense of the term." Leading examples of this category are the tax and the government enterprise, the basic and direct aim of which lies in the supply of material resources for the government. Even in empirical facts of this kind, needless to mention, there are some non-fiscal aspects.

2. Those phenomena, which do not primarily interest us with respect to their fiscal significance, but which, however, do acquire significance in this regard, because they have consequences of interest from the fiscal point of view. As defined by Max Weber, they may be called the fiscally "relevant" phenomena. The quality and quantity of government expenditure is a good example. As will be explained later, the size and items of public expenditure, though they are not a fiscal phenomenon as such in the narrow sense, affect the fiscal life of the state.

3. Those phenomena which are in essence not fiscal in our sense and the fiscal effects of which are of no, or at best slight interest to us, but which are influenced more or less strongly by fiscal motives or factors. In accordance with Max Weber we call this phenomena fiscally "conditioned."

The protective import duty is one of the examples.[4]

There can be no doubt that not only the phenomena of the first category constitute the main problem of fiscal science, but also the fiscal aspects of the second and third categories fall within the limits of this discipline. From olden times up to the present, the economy of compulsory acquisition presents itself in the most typical and representative form in the economy of the government. This is the reason why fiscal science at present is exclusively concerned with this kind of economy.

V. *Fiscal Aspects of Government Activities*

What part of government activities, then, is the main domain of fiscal science? It is the revenue of the government. But there are various kinds of public revenue. They are taxes, fees, domains, government enterprises, etc. A comparative study will show that the element of compulsory acquisition presents itself in varying degrees according to the nature of the revenue and the time and place of its acquisition. Fiscal science naturally attaches much importance to those revenues in which the element in question predominates, but almost all kinds of public revenue come under the scope of fiscal science because the government is a compulsory organization which is well able to exercise authority at all times and, accordingly, its revenue has a compulsory character in a more or less degree. Thus public revenues constitute the main problem of our science. As for public expenditures, they should be studied by fiscal science only insofar as and as long as they tend to affect the revenue of the government or as they are related to our basic idea.

A historical study reveals that from olden times up to the present, the concrete forms of government finance have developed in the following order: (1) domains, (2) regalia and monopolies and (3) taxes. Indications are increasing that government enterprise as the fourth form will gain in importance in the future. It will be observed that the element of compulsory acquisition is in more or less degree inherent in all these forms of finance since the beginning of fiscal life to the present days. But it has shown itself more prominently in the course of historical development. In domains, for instance, the idea of compulsory acquisition did not appear in a clear-cut form, and it is in taxes that it presents itself first in full-fledged form. There is good reason to believe that it will manifest itself in almost pure form in government enterprises of a socialistic order.

It may be concluded that the basic idea of fiscal science is a product of historical development and has presented itself in a distinct form, first at a later stage of historical progress of public finance. However, we must bear in mind that in case of systematic research, we must needs start from the basic idea. Otherwise, neither the course of historical development from the beginning to the present, nor the perspective of a future organization can logically be surveyed. Unless based, as a logical premise, upon the basic idea born after a certain course of historical development, any systematic research in fiscal science would be impossible. It is simply with this idea as a logical premise and as an inherent assumption that every stage of fiscal development can be construed not as an arbitrary and contingent concourse but as a necessary and inevitable sequence. We have to distinguish the point of departure of scientific study from the beginning of historical development of any phenomenon.

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[4] As for these three categories, cf. Max Weber, "Die Objektivität sozialwissenschaftlicher und sozialpolitischer Erkenntnis" pp. 162-163, in *Gesammelte Aufsätze zur Wissenschaftslehre*, Tübingen, 1922.

It is to be feared that this methodological study may appear to some to be metaphysical and unpractical. But I firmly believe that such research, and this alone, will provide a foundation for the autonomy of fiscal science. Some may oppose such inquiries on methodology and the philosophy of knowledge on the ground that they do not contribute anything directly to the amplification of the contents of special disciplines. They fail to recognize that studies of this kind originally bring about results for practical use only in an indirect way. Kant's philosophy of criticism, for instance, did not contribute directly to the amplification of the special sciences, yet his philosophy has had great influence not only on the method, but also, though indirectly, on the contents of the sciences. In academic circles of fiscal science, methodological studies have been disregarded. Therefore it is all the more necessary to promote research of this kind.

Methodological inquiries have often turned out to be of practical use. First, it will become clear as a result of such studies that unexpectedly close relations exist between phenomena which have previously been considered as having little to do with each other. For instance, at a first glance there appears to be little relationship between the principle of taxation and that of fixing railway rates, and these are studied by two different branches of science. However, if it becomes clear that the railway and tax revenues can be integrated in the basic idea of the economy of compulsory acquisition, a study on the one may be applied, with or without necessary alteration, to research on the other, thereby eliminating a waste of academic effort. As is well known, railway rates are subject to principles of the cost of services, the value of services, the ability to pay and equal sacrifice. These terms are the same as those in use for taxation in fiscal science and their meanings are similar.[5] They are in fact two forms of economy derived from one and the same root, which we call the economy of compulsory acquisition.

I wish to emphasize as the basic idea of fiscal science the economy of compulsory acquisition, and to point out the public revenue of governments as its typical embodiment.[6] As there are various objections to this idea, I will try to review them one by one in the following part of this essay.

VI. *Theory of Making Public Expenditure a Main Problem of Fiscal Science*

As the first of the oppositions to my view, attention must be paid to the theory that fiscal science needs to examine the practical appropriateness of public expenditures as well as the public revenues of the state. An opinion along this line appears to gain ground of late among fiscal experts. For instance, Dalton, Goldscheid and Kuczynski, who lay stress on the social significance of public finance, advocate that it is the main issue of fiscal science to pass judgment upon the appropriateness of public expenditure itself and complain that fiscal science has thus far been too much inclined to study public revenue rather than pay due consideration to public expenditure.[7] Authors of this opinion are too numerous to be cited here.

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[5] The similarity between the principle of fixing railway rates and that of taxation has already been mentioned by Gustav Cohn in his work, *Die englische Eisenbahnpolitik der letzten zehn Jahre*, Leipzig, 1883, pp. 65-84. This opinion is supported, among others, by William M. Acworth (*The Elements of Railway Economics*, Oxford, 1905, pp. 88-98) and is opposed by F. W. Taussig ("A Contribution to the Theory of Railway Rates," in *Quarterly Journal of Economics*, 1891, pp. 438-465) and many others. But it should be noted that what-the-traffic-will- bear principle has remained predominant in railway rate fixing just as well in the case of taxation since the forties of the nineteenth century.

[6] Henry Carter Adams pointed out, as one of the reasons why older English writers on public finance had inclined to think much of public revenue and little of public expenditure, that they considered that the functions of the government should be restrained and reduced as much as possible (Henry Carter Adams, *The Science of Finance*, N. Y., 1898, p. 53). I admit that this is true, but may be a psychological (but not logical) reason why the science of public finance did pay little heed to public expenditure. Assuming the same attitude, Shirras remaked, "A theory of public expenditure in the nineteenth century was not very necessary because the scope of the functions of Government was restricted." He futher contended that since the turn of the twentieth century this has not been the case, and that a study of public expenditure has become necessary because of the ever-increasing tendency of public expenditure in various fields of government life (G. F. Shirras, *The Science of Public Finance*, London, 1924, p. 27 et seq.). A similar view was voiced by M. H. Hunter in his *Outlines of Public Finance*, N. Y., 1921, p. 22.

It is not from such an individualistic theory of the state as flourished in the first half of the nineteenth century that I attach less importance to public expenditure in fiscal science. As will be explained later, public expenditure is no other than gevernment activity expressed in term of money, and the real picture of the state is very clearly reflected in its expenditure. Therefore, no matter what theory of the state we may have, it is necessary to make an analytical study of public expenditure. Who can deny this ? However I wish to stress that public expenditure is primarily a subject matter of study for other social sciences, such as the science of public administration, and does not belong to the task of fiscal science.

It is noteworthy that Dungern attributed the neglect of public expenditure by the older fiscal economists to a different factor as follows: "Dass die Finanzwissenschaft die Einnahmen stark bevorzugt, hat ubrigens auch einen rein historischen Grund, indem lange Zeit die Stände zwar ein Einnahmebewilligungsrecht hatten, ihnen aber kein Eifluss auf die Ausgaben des Staates eingeräumt war, diese vielmehr mehr oder weniger geheim gehalten wurden" (Friedrich Frhr. v. Dungern, *Finanzfragen der Gegenwart*, Jena, 1929, p. 16). This statement deserves special attention as it suggests a sociological factor for the historical formation of the basic idea of public finance.

I am opposed to this view. So far as public revenue and expenditure of the state are concerned, it is essential to decide upon the following three matters: 1) size or the total amount of public expenditure, 2) items of expenditure, or its apportionment for various government functions, and 3) measures to be taken for raising public revenue to support this expenditure. These are so closely connected with one another that either of them cannot be dealt with independently. It is needless to mention that the size and items of public expenditure reflect the features of government policies concerned, such as economy, social welfare, education, peace preservation and others, and are determined by these policies. Passing judgment on the practical appropriateness of public expenditures, therefore, is the task of such other disciplines as education, economy, peace preservation and so forth, and not the business of fiscal science as such. It belongs to the domain of general theory of the state and the basic principles on public administration, that unify and coordinate all these studies (including public finance). As people nowadays are usually inclined to deal, in both thinking and conduct, with various aspects of their life by separating one from another, although they take for granted the ultimate unification and coordination of these aspects, so in activities of the state, various organs take charge of their respective functions separated from one another. The recent tendency of ever-increasing specialization of public functions and the ever-extensive differentiation of social and political sciences is to be construed as reflecting this characteristic of our way of life. What I wish to emphasize is not the fact that it is of no use to examine the adequacy of public expenditure, but that this does not fall within the sphere of fiscal science. Indeed, it is true that textbooks and other works on public finance not seldom concern themselves with the study on the justness or otherwise of public expenditure, but this is simply for the sake of convenience, and not from pure logic.

By advocating that the main issue of fiscal science does lie primarily in the field of public revenues or the supply of necessary means to public bodies, I do not mean that public revenue can be treated with no respect to other spheres of public activity. The autonomy of fiscal science does not imply its isolation from other academic studies. That public finance deals with the acquisiton of means for the government does not signify that, in the operation of government policies, the necessary means can be raised without paying regard to public expenditure. What I wish to say is that it is not the business of public finance but of the science of public administration and other disciplines to determine public expenditure. A tax, for example, imposed on the people should be fixed by comparison of the social values to be created through public expenditure and the loss of social values or social sacrifice incurred by taxation. This comparative study of social values concerning public income and outgo, with a view to producing maximum social values by government activities is a subject matter of the general theory of the state or synthetic study, which evaluates and enables all policies to be in right places. Every policy or discipline of the special branches of government functions, such as education, economy, social welfare, peace preservation and so on, on the other hand, is, each of them, a special assignment of that general policy. To determine the social values created by public expenditure is the task of such special policies or disciplines. It is with the social value of public expenditure given as a premise or assumption, that the study of public finance is carried on. The proper purpose of fiscal science is to obtain at the least social sacrifice, or at a minimum cost, the means necessary for public expenditure. However, in case it becomes clear that the marginal sacrifice to be incurred by raising the revenue, e. g. by taxation, would exceed the marginal value of public expenditure, it would contradict the principle of the maximum social value to continue to collect further means from the private economy beyond this limit. Thus, the curtailment of public expenditure would be required in such a case, because the limit of taxation is already attained. To determine what kind of expenditure then should be curtailed is the business of other sciences. Fiscal science, after all, concerns itself with the means necessary for public expenditure in accordance with the principle of minimum social sacrifice, within the limit of the marginal value of public expenditure determined by othe disciplines.

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[7] Hugh Dalton, *Principles of Public Finance*, 2nd ed., London, 1924, p. 143; Rudolf Goldscheid, "Staat, öffentlicher Haushalt und Gesellschaft," in *Handbuch der Finanzwissenschaft*, 1. Bd., Tübingen, 1926, p. 176; and Jürgen Kuczynski, *Der Staatshaushalt*, Berlin, 1927, p. 7.

VII. *Theory of Making Finance Minister's Affairs an Object of Fiscal Science*

Based upon the fact that the Finance Minister in many countries, compiles the budget and examines the adequacy and fitness of public expenditure as one of his important functions, some scholars contend that a study on the appropriateness of public expenditure belongs to the scope of fiscal science. This is the second objection to my theory.

In practice, it is usual that the Finance Minister, in making an estimate, compares the social value of expenditure with the social sacrifice of revenue or resources for such expenditure. Taking into consideration the people's ability to pay taxes and other factors, he sometimes demands the reduction or cancellation of some expenditures requested by other Ministers. This clearly indicates that the Finance Minister is concerned with the judgment and determination of public expenditure itself. Some authors resting on this fact, insist that fiscal science should comprehend such a study of public expenditure as one of its subject matters. I believe this view to be unjustifiable. In practice, the division of public affairs among the competent Ministers does not necessarily coincide with the separation of studies among the various branches of learning. It is often determined for the sake of convenience of practical administration. For instance, matters concerning banking, insurance, international trade and foreign exchange are under the jurisdiction of the Finance Minister in some countries but in others under that of the Minister of Commerce and Industry.

In these circumstances, according to that way of thinking, as the scope of fiscal science is considered to be determined mainly by the Finance Minister's jurisdiction, a study of banking for instance would fall within the province of fiscal science in some countries and not in others, as the case may be. I believe that it is unjust to consider anything as a problem of fiscal science simply on the ground that it is included in practice in the activities of the Finance Minister. Indeed it is true that budget making and judgment on public expenditure demand close investigation of the whole field of public administration. But the fact that the Finance Minister in many countries at present examines the expenditure of various Ministries should be construed as beyond the proper sphere of public finance. In practice not only the Finance Minister, but also all other Ministers concern themselves with matters relating to various branches of science. As the Finance Minister takes charge of other administrative affairs than public finance, so all other Ministers take public finance into consideration as well as affairs under their respective jurisdiction. The Education Minister, for instance, will refrain from working out an educational plan that would demand huge expenditure exceeding the people's economic ability to pay, although he is mainly in charge of the affairs of education and general culture. This means that the Education Minister keeps in mind public finance as well as his main branch of adminstration.

All this speaks of the existence of inseparable correlations and interdependence of various activities and functions of the state just in the same way as in individual life. No policy can be determined and enforced, isolated from and without respect to relationship with all other policies, because intimate connections exist among them all. Generally speaking, empirical reality is the nexus of interrelated factors, and every field of human life is intertwined with all others in a baffling tangle. Such being the case, it becomes necessary in any science, to find out its basic idea or to reply on what in the practically infinite and immeasurable complexity of concrete reality should be interpreted as an a priori or guiding concept of that science. It is essential to distinguish the fact that infinite and innumerable interrelations exist among phenomena of our real world from the theoretical claim that any science requires its own basic idea.

VIII. *Theory of Completely Eliminating Public Expenditure From Scope of Fiscal Science*

Whereas the first and second objections above explained tend to extend unduly the domain of fiscal science, the third, which I shall now examine, is inclined to restrict unduly the scope of this science. This is the theory of Kaizl of Bohemia and Leroy-Beaulieu of France who hold that public expenditure be eliminated entirely from the sphere of fiscal science. I am opposed to their view, as I believe they seem to define too narrowly the theme of this science and to limit it merely to "fiscal phenomena in the narrow sense," by eliminating those "fiscally relevant" and "fiscally conditioned."

I am of the opinion that public expenditure, though it does not constitute the main problem of our discipline as already explained, has on the other hand fiscal significance. The size and items of public expenditure as such, but not judgment on the appropriateness of the same, are of fiscal importance, because they are factors affecting public revenue, main field of fiscal science. In other words, they should be considered phenomena fiscally relevant. For example, as the means necessary for disaster relief expenditure is naturally raised as soon as possible, it is generally believed to be adequate to finance them by public debt. On the other hand it is usually considered to be appropriate to finance, say, a ten year program for expansion of the educational institutions by means of taxation. Even in the case of this expenditure for education, if a very large amount is required, it is sometimes thought justifiable to raise the money by public borrowing. To sum up, as the size and items of public expenditure have influence on the methods and measures of public revenue, this aspect of public expenditure should de considered phenomena fiscally relevant. This does not imply, however, that the appropriateness of public expenditure itself should be discussed in fiscal science. What I wish to propose, is that the size and items of public expenditures must be made clear as a prerequisite of the study of public revenue. These must be strictly distinguished from each other.[8]

IX. *Theories of Földes and Moll*

Many scholars, such as Földes, Moll and Gerloff, have tried to make clear the proper position of public expenditure in fiscal science. I look upon their theories with high regard, but I do not agree with them in some respects. As for Gerloff, mention has already been made in this treatise, and references will be made in this part to Földes and Moll.

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[8] Kaizl argued as follows: "Die selbständige Wissenschaft, deren Gegenstand die wirthschaftliche Erwerbsthätigkeit politischer Verbände ist, heisst Finanzwissenschaft; sie heisst deshalb so, weil die Geldeinnahmen des Staates, welche durch die Erwerbsthätigkeit beschafft werden, seit Langem Finanzen heissen. Finanzwissenschaft ist daher Wissenschaft von den Finanzen, d. h. von den Einnahmen des Staates und der Gemeinden überhaupt, oder anders gesagt, die Wissenschaft von der Deckung der wirthschaftlichen Bedürfnisse des Staates und der niedrigeren Gemeinden" (Josef Kaizl, *Finanzwissenschaft*, trans. from the Czech language into German by Körner, Part 1, Vienna, 1900, p. 34 et seq.). Kaizl confined his fiscal studies to the revenue of the state and other public authorities. Except brief remarks on collective wants and government activities in Chapter 1, Part I of his *Finanzwissenschaft*, the public expenditure is not at all touched upon in this work. With his sharp insight, Kaizl asserted about a half century ago that "Die Finanzwissenschaft ist methodologisch bisher wenig ausgebildet" (ibid., p. 40). He endeavoured to systematize fiscal science from the sociological standpoint, making himself a distinguished figure of the social theory of our science. His academic contribution in this respect cannot be praised too much. But it is undeniable that he was too engrossed in the methodological purification of the science to pay proper attention to the fiscal aspect of public expenditure.

Leroy-Beaulieu is noted for his figurative explanation about the scope of fiscal science in which he appropriately compared the task of the fiscal economist to that of an architect. He observed, "Si vous faites venir un architecte pour vous construire une maison, ce n'est pas son affaire de s'enquérir si cette construction est trop vaste pour votre fortune ou pour votre situation sociale; ce qui le concerne, c'est de faire cette maison aussi solide, aussi commode, aussi belle que possible avec le minimum de dépenses pour le propriétaire. De même celui qui écrit sur la science des finances peut plaindre sincèrement les États qui font de trop grosses dépenses, mais sa tâche réelle consiste à indiquer comment un État peut se procurer des ressources en ménageant autant que possible les intérêts des particuliers et en respectant la justice" (Leroy-Beaulieu, *Traité de la Science des Finances*, tome 1, 8th ed., Paris, 1912, pp. 2-3).

If we investigate fiscal literature, we find that most authors, regardless of formal definitions, have emphasized the sphere of public revenue in their studies. To give examples, older German experts such as Justi, Eiselen and Malchus, and English classical economists, except Adam Smith, eliminated explicitly or implicitly, studies of public expenditure from their fiscal theories. This sort of thinking, i. e. the idea that the main theme of fiscal science lies in public revenue, has been followed by many others since the turn of the twentieth century. Typical examples are: C. C. Plehn (*Introduction to Public Finance*, 4th ed., N. Y., 1924, p. 6), Béla Földes (*Finanzwissenschaft*, 2nd ed., Jena, 1927, p. 91 et seq.), Eheberg-Boesler (*Grundriss der Finanzwissenschaft*, 7th ed., Leipzig, 1936, pp. 7-8), W. Gerloff (op. cit., pp. 4-13), Bruno Moll (*Probleme der Finanzwissenschaft*, Leipzig, 1924, p. 24 et seq. and *Lehrbuch der Finanzwissenschaft*, Berlin, 1930, p. 37 et seq.), and Paul Mombert (*Grundzüge der Finanzwissenschaft*, Leipzig, 1928, p. 14 et seq.).

Földes, recognizing that public expenditure as such belongs to the scope of other sciences, especially the science of public administration (Verwaltungslehre), asserts that, with the principles concerning the aim of the state and the satisfaction of its public wants taken for granted, fiscal science is to confine its studies merely to the "fiscal aspect of expenditure." Indeed, he can be said to have entertained a nearly right and just opinion about the treatment of public expenditure in fiscal science. But as for the problems of public expenditure to be dealt with by this science, he states as follows:

"Die Finanzwissenschaft wird daher nach Entscheidung der Prinzipien sich darauf beschränken, zu untersuchen, wie gross der Staatsbedarf ist, wie derselbe am zweckmässigsten zu befriedigen ist, welches Verhältnis zwischen den Ausgaben angestrebt werden soll, wie die Bedarfsbefriedigung der Zeit nach verteilt werden soll, welche Reihenfolge in der Befriedigung gewisser Bedürfnisse befolgt werden soll, ob die Staatsausgaben eine steigende oder sinkende Tendenz zeigen und was die Ursache dieser Tendenz usw."[9]

Among the various problems cited above, studies of the proportion between various expenditures and the order according to which public wants are to be satisfied, do concern the judgment on the appropriateness of public expenditure, and it seems to me to be inconsistent with his general theory of fiscal science, to the effect that "Die Staatshaushaltslehre kann sich nicht mit den prinzipiellen Fragen der Ausgabenwirtschaft befassen. Diese Probleme gehören in den Bereich anderer Wissenschaften, so namentlich in den Bereich der Verwaltungslehre."[10]

Moll claims the possibility of autonomous fiscal science, and opposing the two extreme views that the study of public expenditure should de eliminated from fiscal science and that detailed inquiries should be made as regards the adequacy of public expenditure, he takes the golden mean, saying that, as an ideal, only the fiscal aspect of public expenditure should be the object of study in fiscal science.[11] I completely agree with him in this conclusion.

As a reason for his opposition to the theory that fiscal science should pass judgment on the appropriateness of public expenditure, Moll holds as follows:

"Wenn diese Nützlichkeit und Notwendigkeit, Zweckmässigkeit oder Berechtigung öffentlicher Ausgaben schlechthin diskutiert wird, so verlässt man zweifellos den Boden der Wissenschaft, mindestens der Finanzwissenschaft und begibt sich völlig auf das schwankende Brett der Politik. Es ist leicht einzusehen, dass das Werturteil, das hier gesucht wird, immer ein stark subjektives, niemals aber eine objektiv zu begründende oder eine schlechthin dem Nachdenken oder der Erfahrung entspringende Feststellung sein kann."[12]

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[9] Béla Földes, *Finanzwissenschaft*, 2nd ed., Jena, 1927, p. 92.

[10] Ibid., p. 91.

[11] Bruno Moll, *Probleme der Finanzwissenschaft*, Leipzig, 1924, pp. 24-35.

I cannot concur with Moll in this respect. He denies the possibility of scientific and objective treatment of the justness or fitness of public expenditure, on the ground that this falls within the area of policy, and that value judgment (Werturteil) of a subjective nature is always unavoidable in studies on policy in general. If this be true, the policy of public finance, being a specie of policies, would inevitably be of subjective character, and for this reason, the study of this policy would have to be excluded from the domain of fiscal science. For all this, Moll recognizes the possibility of scientific treatment of financial policy, as explained in the footnote 14.

This problem has a bearing upon the value judgment controversy. I myself, having already expounded my opinion on this controversy in my works, refrain from going into details on this subject.[13] What I wish to point out here is that I do not subscribe to Moll's ground for the proposition that studies of the appropriateness of public expenditure itself are not within the scope of fiscal science. To repeat, I concur in his proposition, but on different grounds, which I have already explained.[14]

X. *Theory of Confining the Domain of Fiscal Science Only to Public Economy*

Opponents of my proposal that the scope of fiscal science be extended to the economic life other than that of the state and other public bodies, contend that this contradicts the traditional idea of fiscal science. This view is supported by a large number of authors. Although I have already explained my view elsewhere in this article, I shall re-examine it from another angle.

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[12] Bruno Moll, *Probleme der Finanzwissenschaft*, Leipzig, 1924, p.29.

[13] Cf. my works in Japanese: *Principles of Fiscal Science*, Tokyo, 1931, pp. 165-222; *Theories on the Principles of Taxation in Fiscal Literature*, Tokyo, 1935, pp. 135-187; *General Theory of Social Policy*, Tokyo, 1949, pp. 97-146.

[14] Bruno Moll, in his following works, *Probleme der Finanzwissenschaft*, Leipzig, 1924, pp. 1-23; *Lehrbuch der Finanzwissenschaft*, Berlin, 1930, p. 25 et seq.; and "*Gibt es eine exakte Nationalökonomie?*," a lecture delivered at Leipzig, 1924, emphasizes the subjectivity of the value concept and says that the value judgment is always and in all places inevitably of subjective nature. But he admits that there exists a difference of degree in the subjectivity of evaluation, and there is sometimes a subjectivity of such an objective nature to be just close to objectivity in the strictly logical sense of the term. For instance, he says, the judgment as to war financial policy that taxation is more adequate and expedient than public debt, has a subjective character which is far closer to objectivity than the judgment whether or not a blonde is more beautiful than a brunette (*Probleme der Finanzwissenschaft*, Leipzig, 1924, p. 6 et seq., and *Lehrbuch der Finanzwissenschaft*, Berlin, 1930, p. 29 et seq.). I believe that among judgments on the appropriateness of public expenditure, there exist in fact some which are of a subjective nature quite close to objectivity as in war financial policy, and it follows that those studies must belong to the scope of fiscal science. Moll, nevertheless, opposes the inclusion of all studies of the adequacy of public expenditure in the sphere of our science.

When analysing natural or social phenomena, we often find that those which appear to be widely apart from one another in appearance will turn out to be just the same in nature. To take an illustration, in the days when our ancestors had little intercourse with foreigners, only those who spoke the same language and had the same complexion as theirs were considered as mankind, and their personality was fully recognized, while foreigners were regarded as if they were beasts. But when it became clear, after investigation of the nature of mankind, that a human being is a reasonable animal, every being endowed with reason was regarded as a man, regardless of racial origin, language or features. In the same way, the conventional idea that the domain of fiscal science should be confined to the economic life of the state and other public authorities is none other than an opinion prejudiced by mere appearances. When it becomes clear that the fundamental concept of this science is the economy of compulsory acquisition, any empirical fact even in a field other than the public economy, becomes fiscal with logical necessity, insofar as it involves the element of this concept, and this fact or this aspect of reality should be studied as a fiscal problem.

Walter Lotz recognized fiscal significance in the household economy of the Christian church in olden times.[15] It is also noteworthy that recently such a new idea as "quasi-public finance" has come to be used among Japanese scholars. It signifies the economy of such quasi-public organizations as chambers of commerce and industry, agricultural cooperative societies, associations for social welfare, and religious orders. The economy of these organizations is studied as "quasi-fiscal science" on the basis of fiscal principles with necessary adjustments. These problems have been included in public finance or fiscal science in the wider sense of the term.[16]

In Germany, too, the idea "intermediäre Finanzgewalt" has gained ground in academic circles. It is also called "hilfsfiskalischer Haushalt," which means an organization with fiscal authority other than the state and local public bodies. This is an organization which has compulsory power to raise money, in the form of membership fee, premium, etc. The church, chambers of commerce, economic associations, social insurance agencies, etc. belong to this category. It is said that in Germany before World War II, the total raised by such organizations accounted for about 50% of the amount collected by the National Treaury.[17] Even a book on this subject was published in 1936: Walter Herrmann, *Die Intermediären Finanzgewalten*, Jena, 1936, in which the intermediary fiscal authority is dealt with as similar in nature to state and local finance.

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[15] Walter Lotz, *Finanzwissenschaft*, 2nd ed., Tübingen, 1929, p. 2.

[16] This new concept was proposed by the following studies in Japanese: Masao Kambe, *Public Finance*, revised and enlarged ed., Tokyo, 1935, pp. 4-5; and "Quasi-Public Finance," an article in the supplementary volume of *Dictionary of Economics*, ed. by the Institute for Economic Research in the Osaka University of Commerce, Tokyo, 1936.

Thus, it is worthy of note that in Japan and in foreign countries the prevailing theory of confining the problem of fiscal science to the state and local authorities has begun to give way to a wider idea covering quasi-public organizations. What is the implication of this tendency? I wish to call the reader's attention to this fact.

XI. *Relation Between Economy of Compulsory Acquisition and Taxation, Government Enterprise and Public Debt*

The last group of dissenters contends that my opinion is not applicable to goverment enterprises and the public debt, although it holds true of taxation. Let us re-consider this opposition. The economy of conpulsory acquisition as I put it means that, with a view to obtaining the necessary means of life, a certain economic organization executes what has been decided upon by its own unilateral will (needless to say, in the case of modern democratic states, this is ultimately determined by the majority will of the people). Its practical forms differ widely according to the prevailing social and economic conditions of time and place. As already mentioned elsewhere, there are various forms other than taxes as concrete forms of the economy of compulsory acquisition.

Let us first consider government enterprises. In a society where the national economy is strongly controlled, the government uses its enterprises extensively as a means of economic control and as a source of revenue. In such a case, government enterprises are operated by the controlling will of the state, and their revenue is of a compulsory nature. Such public enterprises, therefore, are one kind of economy of compulsory acquisition. Among those enterprises, however, there are some which are operated for other purposes than fiscal revenue, and which do not come under the scope of fiscal science. Even in the case of government enterprises with a fiscal purpose, its compulsory character varies widely in degree. In fiscal monopoly, for instance, the compulsory element presents itself in many countries more distinctly than in the case of a public railway. In short, we cannot say that all public enterprises, without exception, have fiscal significance in the same degree. It varies in accordance with the nature of business and its time and place. Nevertheless it is quite certain, that many of them have fiscal implication in some sense or other.

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[17] Cf. F. K. Mann, *Steuerpolitische Ideale*, Jena, 1937, pp. 339-340.

As for the public debt no one can deny that it constitutes a kind of acquistive economy. The question is whether or not it has a compulsory nature. There can be no doubt that forced loans are compulsory acquisition and fiscal phenomenon in the narrow sense. But the question arises: How about voluntary loans? These, though voluntary in appearance, being the liability of the state or other public authorities, have in essence some elements of compulsion more or less in latent from. For instance, even in the case of voluntary loans, terms and conditions for interest payment, conversion, redemption, repudiation of debt, etc. are often determined unilaterally by the government. Especially when the central bank takes up the bulk of public debt, there is little difference between public debt and direct currency issues by the state in the sense of compulsory acquisition. Here the coercive nature of the public debt explicitly manifests itself. Moreover, in a society where tax economy prevails, the public debt is considered to rest upon the tax economy itself, in the sense that its issue is made in full consideration of the people's ability to pay and capital redemption and interest payment are financed by means of taxes in the long run. These are reasons why we attribute fiscal significance to the public debt.

It would be rash, however, to conclude that all matters relative to public debts come under the scope of fiscal science. As already pointed out, empirical reality as such is not in the least a subject matter of study for any science. The public debt, for example, functions not only as a source of public revenues but also as a means for savings and investment, control of money and credit, and development of national economy. Such non-fiscal aspects of public debts should be studied by branches of science other than fiscal science, such as the theory of money and banking, economic policy, and so on. Therefore, the aspects of public debt to be studied by various disciplines vary widely according to the nature of their basic ideas. Fiscal science concerns itself mainly with that aspect of public debt relating to the economy of compulsory acquisition. As already pointed out, the same can be said of government enterprises, and taxes which are generally regarded as the most typical forms of fiscal phenomenon. In conclusion, it can be said that both public debts and government enterprises have fiscal aspects.

In this treatise, I am mainly concerned with literatures of foreign countries. But I have to mention at this opportunity that I have been the recipient of valuable advice and suggestive criticism from a large number of Japanese specialists since I first made public this theory about twenty years ago.

PUBLICATIONS RECEIVED

Periodicals

Philippines

Journal of East Asiatic Studies, Vol. I, No. 4, Vol. II, No. 1. Manila: The Univ. of Manila.

Thailand

Current Statistics, July-Dec. 1952. Bankok: Bank of Thailand.

Report for the year 2493. Bankok: Bank of Thailand.

Australia

Economic Record, Vol. XXVIII, No. 55. Melbourne: The Univ. of Melbourne Press.

New Zealand

Monthly Abstract of Statistics, July-Dec. 1952. Wellington: Census and Statistics Department.

Ceylon

Central Bank of Ceylon Bulletin, Aug.-Dec. 1952. Colombo: Central Bank of Ceylon.

India

The Eastern Economist, Vol. XIX, Nos. 8-25, Vol. XX, Nos. 1-3. New Delhi: The Eastern Economist Ltd.

Monthly Abstract of Statistics, Vol. V, No. 11. New Delhi: Central Statistical Organization.

Israel

Statistical Bulletin of Israel, Vol. III, Jan.-May, June-Sept. 1952. Tel-Aviv: Central Bureau of Statistics and Economic Research.

Latest Figures Available at End of, July, Aug. 1952. Tel-Aviv: Central Bureau of Statistics and Economic Research.

Egypt

Economic Bulletin, Vol. V, Nos. 2, 3. Cairo: National Bank of Egypt.

U. S. A.

The Accouting Review, Vol. XXVII, No. 4, Vol. XXVIII, No. 1. N. Y.: American Institute of Accountants.

The American Economic Review, Vol. XLII, Nos. 4, 5. Los Angeles: The American Economic Association.

Bulletin of the University of Toledo, Vol.XXX, No. 1. Toledo: Univ. of Toledo.

Business Development, Vol. XV, No. 4. N.Y.: The Chase National Bank.

College and University Bulletin, Vol. V, Nos. 3-6. Washington: National Education Association.

The CPA, Oct.-Dec. 1952, Jan.-Feb.1953.N.Y.: The American Institute of Accountants.

Current Economic Comment, Vol. XIV, Nos. 3, 4. Illinois: Univ. of Illinois, College of Commerce and Business Administration.

Direction of International Trade, Vol. III, Nos. 5-9. N. Y.: Statistical Office of United Nations.

Farm Economics, No 185. N. Y.: New York State College of Agriculture at Cornell Univ.

Farm Science, Vol. VI, Nos. 11, 12, Vol. VII, Nos. 1-4. Ames: Iowa State College.

Federal Reserve Bulletin, Vol. XXXVIII, Nos. 9-12, Vol. XXXIX, No. 1. Washington: Board of Governors of the Federal Reserve System.

The Guaranty Survey, Vol. XXXII, Nos. 6-10. N. Y.: Guaranty Trust Company of N. Y.

Illinois Business Review, Vol. IX, Nos. 9-12, Vol. X, No. 1. Illinois: Univ. of Illinois, College of Commerce, Bureau of Economic and Business Research.

International Conciliation, Nos. 483-487. N. Y.: Carnegie Endowment for International Peace.

International Financial News Survey, Vol. V, Nos. 9-28. Washington: International Monetary Fund.

International Financial Statistics, Vol. V, Nos. 9-12, Vol. VI, Nos. 1, 2. Washington: International Monetary Fund.

The Journal of Accountancy, Vol. XCIV, Nos. 4-6, Vol. XCV, Nos. 1, 2. N. Y.: American Institute of Accountants.

The Journal of Air Law and Commerce, Vol. XIX, No. 3. Illinois: Northwestern Univ.

The Journal of Political Economy, Vol. LX, Nos. 4-6. Chicago: The Univ. of Chicago Press.

Land Economics, Vol. XXVIII, Nos. 3, 4. Madison: Univ. of Wisconsin.

Michigan Business Studies, Vol. XI, No. 1. Ann Arbor: Univ. of Michigan Press.

Monthly Economic Report for Territory of Hawaii, Sept.-Dec. 1952. Honolulu: Office of Price Stabilization.

Monthly Review, Aug.-Dec. 1952, Suppl., Aug. 1952, Jan. 1953. San Francisco; Federal Reserve Bank of San Francisco.

Monthly Review of Credit and Business Conditions, Vol. XXXIV, Nos. 9-12, Vol. XXXV, Nos. 1, 2. N. Y.: Federal Reserve Bank of New York.

Oregon Business Review, Vol. XI, Nos. 9-11. Oregon: Univ. of Oregon, School of Business Administration.

Pacific Affairs, Vol. XXV, Nos. 3, 4. N. Y.: Institute of Pacific Relations.

Pittsburgh Business Review, Vol. XXII, Nos. 8-12. Pittsburgh: Univ. of Pittsburgh, Bureau of Business Research.

Research, Spring 1952. Rhode Island: Univ. of Rhode Island, Agricultural Experiment Station.

Smith College Studies in History, Vol.XXXVIII. Northampton: Smith college.

The Southern Economic Journal, Vol. XIX, Nos. 2, 3. Chapel Hill: The Southern Economic Journal.

Treasury Bulletin, Sept.-Dec. 1952, Jan. 1953. Washington: United States Treasury Dpt.

The Trust Bulletin, Vol. XXXII, Nos. 1-5. N. Y.: American Bankers Association.

Univ. of Cincinnati law Review, Vol. XXI, No. 4. Cincinnati: Univ. of Cincinnati.

Univ. of Illinois Bulletin, No. 75. Illinois: Univ. of Illinois.

Univ. of Kansas City Review, Vol. XIX, Nos. 1, 2. Kansas City: Univ. of Kansas City.

Univ. of the State of New York Bulletin, No. 1411. N. Y.: Univ. of the State of New York.

Vanderbilt Law Review, Vol. VI, No. 1. Tenessee: Vanderbilt School of Law.

Washington Univ. Law Quarterly, Vol. 1952, No. 4, Vol. 1953, No. 1. St. Louis: Washington Univ. School of Law.

Canada

The Business Quarterly, Vol. XVII, No. 3. Ontario: Univ. of Western Ontario, School of Business Administration.

Canadian Statistical Review, Vol. XXVII, Nos. 9-12, Vol. XXVIII, No. 1. Ottawa: Dominion Bureau of Statistics.

Mexico

El Trimestre Economico, Vol. XIX, Nos. 3, 4. Mexico: Fondo de Cultura Economica.

Revista de Economia, Vol. XV, Nos. 8-12, Vol. XVI, No. 1. Mexico: Revista de Economia.

South America

Boletin Mensual, Nos. 291-296. Santiago: Banco Central de Chile.

Revista de la Facultad de Ciencias Económicas y de Administración de Montevideo, No. 4, 1943, No. 6, 1946, April 1952. Montevideo: Universidad de la República.

England

The Cotton Board Quarterly Statistical Review, Nos. 27, 28. Manchester: The Cotton Board, Statistical Dpt.

Economic Digest, Vol. V, Nos 9-12. Vol. VI, No. 1. London: Economic Research Council.

Economica, Vol. XIX, Nos. 75, 76. London: The London School of Economics and Political Science.

Farm Management Notes, No. 8. Loughborough: Univ. of Nottingham school of Agriculture.

National Provincial Bank Review, Nos. 19, 20. London: National Provincial Bank.

Reprint Series, Nos. 61-64. Cambridge: Univ. of Cambridge, Dpt. of Applied Economics.

The Sociological Review, Vol. XLIII, Sec. 6, 7, 8. Ledbury: Le Pray House.

Westminster Bank Review, Aug., Nov. 1952. London: Westminster Bank Ltd.

France

Bulletin Analystique de Documentation Politique, Economique et Sociale Contemporaine, 7e Année, Nos 4, 5. Paris: Fondation Nationale des Sciences Politiques.

Bulletin Economique et Social du Maroc, Vol. XV, No 53. Rabat: Société d'Etudes Economiqnes Sociales et Statistiques.

Bulletin d'Information Economique, No 67. Paris: Banque National pour le Commerce et l'Industrie.

Economic Appliquée,, Tome V, No 5. Paris: Institut de Science Economique Appliquée.

Etudes et Conjoncture, Economie Française, 7e Année, Nos 4, 5, 6. Paris: Institut National de la Statistique et des Etudes Economiques.

Population, 7e Année, Nos 3, 4. Paris: Institut Natinal des Etudes Demographiques.

Problèmes Economiques. Nos 244-262. Paris: Secrétariat du Gouvernement, Direction de la Documentation.

Revue Internationale de Droit Comparé, 4e Année, Nos 2, 3. Paris: Société de Legislation Comparée.

Statistiques & Etudes Financières, Nos 44-49. *Suppl. Statistiques*, Nos. 14-16. Paris: Ministère des Finances.

Tables Mensuelles, Juillet-Nov. 1952. Paris: Secrétariat Général du Gouvernement, Direction de la Documentation.

Germany

Weltwirtschaftliches Archiv, Bd. 69, Heft. 1, 2. Hamburg: Instituts für Weltwirtschaft an der Univ. Kiel.

Holland

The Way Ahead, Vol. II, No. 4, Vol. III, No. 4. 's-Gravenhage: Bibliotheek Economische Voorlichtingsdienst.

Economische Voorlichting, Nos. 33a, 33b, 34. 's-Gravenhage: Bibliotheek, Economische Voorlichtingsdienst.

Italy

Critica Economica, Nos 2, 3. Roma: Critica Economica.

Giornale Degli Economisti e Annali di Economia, Anno XI, Nos 5-6, 7-8. Milano: Univ. Commerciale Luigi Bocconi.

Italian Economic Survey, July-Aug. Sept.-Oct. 1952. Roma: The Association of Italian Joint Stock Companies.

Rassegna Economica, Anno VII, No 4-5. Roma: Associazione fra le Societa Italiane per Azioni.

Servizio di Documentazione, Nos 1-3. Roma: Associazione fra le Societa Italiane per Azioni.

Statistica, Anno XII, Nos 2, 3. Bologna: Istituto di Statistica della Univ. di Bologna.

Studi Economici, Anno VII, No 3-4. Napoli: Univ. di Napoli.

Switzerland

Economia Internazionale, Vol. V, Nos. 3, 4. Genova: Istituto di Economia Internazionale.

International Labour Review, Vol. LXVI, Nos. 3-6, Vol. LXVII, No. 1. Geneva: The International Labour Office.

Monatsbericht, 27 Jahrg., Nos. 9-12, 28 Jahrg. No. 1. Zurich: Schweizerische Nationalbank.

Belgique

Annales de Sciences Économiques Appliquées, 10e Année, Nos 4, 5. Louvain: Institut des Sciences Économiques Appliquées.

Bulletin d'Information et de Documentation, XXVIIme Vol. II, Nos 2-6. Bruxelles: Banque National de Belgique.

Bulletin de l'Institut de Recherches Économiques et Sociale, XVIIIe année, Nos 5-7. Louvain: Institut de Recherches Economiques et Sociales de l'Université Catholique de Louvain.

Spain

Boletin de Estudios Economicos, Vol. VII, Núm. 22-27. Bilbao: Univ. Comercial de Deusto, Associación de Licenciados en Ciencias Económicas.

Denmark

Nationaløkonomisk Tidsskrift, Bd. 90, Hæft 3-4. København: Gyldendalske Boghandel.

Finland

Economiska Samfundets Tidskrift, Årgång 5, No. 4. Helsingfors: Economiska Samfundet.

Books and Pamphlets

American Friend Service Committee. *After Seven Years*. Philadelphia: 1952. Pp. 40.

American Institute of Accountants. *Annual Report of the American Institutes of Accountants 1951-1952*. N. Y.: 1952. Pp. 32.

Central Statistical Organization. *Statistical Abstract, India, 1950*. New Delhi: 1952. Pp. 901.

College of Agriculture. *Cornell Extention Bulletin*, No. 852, No. 861. N. Y.

Committee for Economic Development. *The Threat to our National Security*. N. Y.: Sept. 1952. Pp. 40.

The Same. *The Threat to our National Security*, N. Y.: Nov. 1952. Pp. 12.

The Same. *The Economic Situation in Western Europe*. N. Y.: 1952. Pp. 22.

Cornell Univ. Agricultural Experiment Station. *Bulletin*, Nos. 883, 884. N. Y.

International Monetary Fund. *The World Payments Situation*. N. Y.: 1952. Pp. 54.

Iowa State College of Agriculture and Mechanic Arts. *The Cost of Manufacturing Butter*. Iowa: 1952. Pp. 70.

The Same. *Bulletin*, Nos. P111-P114. Iowa.

The Same. *Mew Findings for Farm Folk*. Iowa: 1952. Pp. 73.

Irving Trust Company. *Annual Report for the Year 1952*. N. Y.: 1952. Pp. 31.

League for Industrial Democracy. *World Cooperation and Social Progress*. N. Y.: 1951. Pp. 38.

The Same. *A moral Awaking in America*. N. Y.: 1952. Pp. 30.

The Same. *World Labor Today*. N. Y.: 1952. Pp. 54.

The Same. *British Labor*. N. Y.: 1952. Pp. 37.

Juan Rodrigquez Lopez. *Nuestra Ensenanza Comercial*. Montevideo: 1930. Pp. 125.

The Same. *El Gobierno de la Rigueza*. Montevideo: 1941. Pp. 20.

Ministère des Finances. *Le Budget de 1952*. Paris: 1952. Pp. 30.

Ragnar Nurkse. *Some Aspects of Capital Accumulation in Under-developed Countries*. (Fiftieth Anniversary Commemoration Lectures). National Bank of Egypt. Cairo:

1952. Pp. 65.

National Planning Association. *Planning Pamphlets*, Nos. 70-81. Washington: 1952.

The Same. *Looking Ahead*. Washington: 1952. Pp. 7.

Princeton Univ, *International Finance Section*, No. 16. Princeton: Princeton Univ. Press.

The Smithsonian Institution. *Annual Report of the Smithsonian Institution.* Washinghon: 1950. Pp. 522.

Textile Reserch Institute. *Cellulose Studies*, (Reprint from Textile Research Journal). Princeton: 1952. Pp. 385-404.

The Same. *Properties of Apparel Wools* (Reprint from Textile Research Jounal). Princeton: 1952. Pp. 441-447.

The Same. *The Swelling of Human Hair in Water and Water Vapor* (Reprint from Textile Research Journal). Princeton: 1952. Pp. 448-465.

J. P. B. Tissot Van Patot. *Het Concentratie-Verschijnsel in Het Binnenlandse Vervoerwezen.* Rotterdam: Bibliotheek der Nederlandsche Economische Hoogeschool. 1952. Pp. 182.

U. S. Treasury Department, Bureau of International Revenue, *Statistics of Income for 1947*. Washington: 1952. Pp. 324.

Universidad de la República, Facultad de Ciencias Económicas y de Administración. *Regimen Cooperativo*. Montevideo: 1941. Pp. 324.

Univ. of California. *An Experimental Study of Tensions in Work Behavior* (Publication in Culture and Society, Vol. II, No. 4). Berkeley: 1951. Pp. 203-242.

The Same, Institute of Industrial Relations. *Productivity*. Berkeley: 1952. Pp. 60.

The Same. Institute of Industrial Relations. *Social Stratification and Political Power.* (Reprint No. 44). Berkeley: 1952. Pp. 357-375.

Univ. of Nottingham School of Agriculture. *Economic Fact About Tractors.* Loughborough: 1952. Pp. 18.

Univ. of Stelllenbosch, Bureau for Economic Research. *Economic Fluctuation in South Africa 1910-1949* (Publication No. 2). Stellenbosch: 1950.

The Same. *Die Suid-Afrikaanse Spoorwee Gedurende* Voorspoed en *Depressie*, 1910-1950 (Publication No. 3). Stellenbosch: 1951. Pp. 87.

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